National Library
of Canada

Bibliothèque nationale
du Canada

Canadian Theses Service

Services des thèses canadiennes

Ottawa, Canada
K1A 0N4

CANADIAN THESES

THÈSES CANADIENNES

NOTICE

The quality of this microfiche is heavily dependent upon the quality of the original thesis submitted for microfilming. Every effort has been made to ensure the highest quality of reproduction possible.

If pages are missing, contact the university which granted the degree.

Some pages may have indistinct print especially if the original pages were typed with a poor typewriter ribbon or if the university sent us an inferior photocopy.

Previously copyrighted materials (journal articles, published tests, etc.) are not filmed.

Reproduction in full or in part of this film is governed by the Canadian Copyright Act, R.S.C. 1970, c. C-30.

AVIS

La qualité de cette microfiche dépend grandement de la qualité de la thèse soumise au microfilmage. Nous avons tout fait pour assurer une qualité supérieure de reproduction.

S'il manque des pages, veuillez communiquer avec l'université qui a conféré le grade.

La qualité d'impression de certaines pages peut laisser à désirer, surtout si les pages originales ont été dactylographiées à l'aide d'un ruban usé ou si l'université nous a fait parvenir une photocopie de qualité inférieure.

Les documents qui font déjà l'objet d'un droit d'auteur (articles de revue, examens publiés, etc.) ne sont pas microfilmés.

La reproduction, même partielle, de ce microfilm est soumise à la Loi canadienne sur le droit d'auteur, SRC 1970, c. C-30.

THIS DISSERTATION
HAS BEEN MICROFILMED
EXACTLY AS RECEIVED

LA THÈSE A ÉTÉ
MICROFILMÉE TELLE QUE
NOUS L'AVONS REÇUE

NL-339 (r.86/06)

Canada

THE UNIVERSITY OF ALBERTA

Value and Compensation: Subsistence Production in the Dene Economy, Fort Good Hope, Northwest Territories

by

© Shirleen Smith

A THESIS
SUBMITTED TO THE FACULTY OF GRADUATE STUDIES AND RESEARCH
IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE
OF MASTER OF ARTS

DEPARTMENT OF ANTHROPOLOGY

EDMONTON, ALBERTA
Fall 1986

Permission has been granted to the National Library of Canada to microfilm this thesis and to lend or sell copies of the film.

The author (copyright owner) has reserved other publication rights, and neither the thesis nor extensive extracts from it may be printed or otherwise reproduced without his/her written permission.

L'autorisation a été accordée à la Bibliothèque nationale du Canada de microfilmer cette thèse et de prêter ou de vendre des exemplaires du film.

L'auteur (titulaire du droit d'auteur) se réserve les autres droits de publication; ni la thèse ni de longs extraits de celle-ci ne doivent être imprimés ou autrement reproduits sans son autorisation écrite.

ISBN 0-315-32371-X

THE UNIVERSITY OF ALBERTA

RELEASE FORM

NAME OF AUTHOR Shirleen Smith

TITLE OF THESIS Value and Compensation: Subsistence Production in the Dene Economy, Fort Good Hope, Northwest Territories

DEGREE FOR WHICH THESIS WAS PRESENTED MASTER OF ARTS

YEAR THIS DEGREE GRANTED 1986

Permission is hereby granted to THE UNIVERSITY OF ALBERTA LIBRARY to reproduce single copies of this thesis and to lend or sell such copies for private, scholarly or scientific research purposes only.

The author reserves other publication rights, and neither the thesis nor extensive extracts from it may be printed or otherwise reproduced without the author's written permission.

(SIGNED) ....

PERMANENT ADDRESS:

9930-112 St.
Edmonton, Alta
Canada T5K 1C7

DATED Sept. 4 1986

THE UNIVERSITY OF ALBERTA

FACULTY OF GRADUATE STUDIES AND RESEARCH

The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies and Research, for acceptance, a thesis entitled Value and Compensation: Subsistence Production in the Dene Economy, Fort Good Hope, Northwest Territories submitted by Shirleen Smith in partial fulfilment of the requirements for the degree of Master of Arts.

....
Supervisor

Milton M.R. Freeman
....

....

Date 1 Sept 86

Abstract

Ascribing a cash value to the products of the bush activities of the Dene of the Northwest Territories of Canada resulted from a need to demonstrate the significance of these activities in the face of increased northern development. The majority of research in valuation studies occurred during the 1970s and was brought on by proposed large-scale development projects such as the Mackenzie Valley Pipeline and the James Bay Hydroelectric Project. Utilizing techniques such as the calculation of the cash value of locally available food products that could substitute for food acquired through hunting, fishing, and gathering, researchers were successful in establishing the importance and viability of subsistence production. However, most researchers cautioned that the precise results obtained were exceedingly general and approximate, and did not actually represent the total value of bush products to the people using them.

With the change in the nature of northern development in the 1980s toward the situation where industry is conducted alongside bush-subsistence activities, the objectives of describing the value of bush production altered. Protection of the ability to undertake these activities, often through compensation or mitigative measures, has required detailed descriptions of the nature of the resources in question. Techniques used during the 1970s to arrive at general cash-equivalent values over large areas were inappropriate for compensation purposes, and, importantly, the factors that could not be included in previous calculations ("intangibles" such as cultural and spiritual value, independence, and teaching children bush skills) required inclusion in any scheme seeking to protect bush activities. Some of these values are described in the context of Dene production activities conducted in the spring and summer of 1984.

An alternative framework for assessing the significance of the bush-subsistence sector of the Dene economy is proposed in the form of a political economy/mode of production analysis. The merits of this approach are that it enables the inclusion of aspects that were designated as intangibles in previous studies through its attention to the social relations of

production; it is concerned in part with the historical background and thus affords a broader perspective than the limited view of previous valuation studies; and it is possible to analytically separate the cash-market sector from the subsistence sector of the Dene economy, in order to examine the interrelationships between the two.

Finally, the ability of compensative and mitigative measures to ensure the continued ability of the Dene to conduct their way of life is questionable. Due to the tendency of compensative measures to deal only with specific, fixed, and finite assets, compensation is inappropriate for protecting the fluctuating, systemic, and social resources at stake in subsistence production. Ultimately, it is only through the political power to control land-use activities on the land that they require that the Dene way of life, along with their ablility to guide and change it, may be protected.

Acknowledgements

I would like to express my most sincere thanks to the people of Fort Good Hope who assisted, instructed, housed, fed, conversed with and befriended me during my visits there. I am truly greatful for the interest and patience shown me, and would like to credit individuals from Fort Good Hope for much of the information and ideas contained in this thesis.

Appreciation is also extended to the members of my thesis committee — Dr. Michael Asch and Dr. Milton Freeman of the Department of Anthropology, and Dr. Harvey Krahn of the Department of Sociology — for their guidance and advice, as well as for their encouragement and hours spent in conversation. This thanks is extended as well to other members of the Department of Anthropology academic and support staff for their assistance and support over the various scholastic rough spots.

I was fortunate to have the companionship of a number of fellow students who proved to be instrumental in the discussion, proof-reading, and friendship necessary to clarify my thinking along the way. Special thanks are due to Thomas Andrews, Rochelle Allison, Becky Cole-Will, Kimball Morris, Rick Will, and Helene Schuld.

Lastly, I am grateful to the Boreal Instute for Northern Studies for their generous research support, and to the Department of Anthropology for financial support during my studies.

Table of Contents

Chapter Page

I. Introduction 1

II. Chapter Two. Valuing the subsistence production of northern Native economies: a critical review of previous research 5

A. Review of previous research 5

Context and objectives 5

Methods and shortcomings 6

B. Large scale resource development projects 6

The Mackenzie Valley Pipeline Project 7

James Bay Hydroelectric Project 8

C. Native economy studies 9

Chang-Mei Lu 10

Edward S. Rogers 11

John Palmer 11

Derek Smith 12

Milton Freeman 13

Peter Usher 13

Scott Rushforth 16

Michael Nowak 17

W.D. Brackel 18

Kenneth Bodden 19

Michael Fisher 19

Mary Pavich 20

D. Wildlife Studies 22

James A. Crutchfield 22

William A. Langford and Donald J. Cocheba 23

Peter Usher 25

E. Other studies 29

Fikret Berkes and Carol Farkas 29

Otto Schaefer 30

F. Conclusions 31

III. Chapter Three. Compensation - a review 33

A. Compensation and mitigation 33

Property rights 36

Compensation and the determination of value 37

B. Compensation for specific damages and compensation for loss of a way of life ..38

Compensation for specific damages 38

Compensation for loss of a way of life 42

Conclusions 50

IV. Chapter Four. Dene subsistence activities and their values. 51

A. A brief description of subsistence production activities 51

Spring hunt 54

Summer fish camp 58

Other productive activities 62

B. Summary: Values of these activities to the Dene 63

V. Chapter Five. Subsistence and commodity production 65

A. Classical political economy and neoclassical economics 66

Classical thoughts on value 66

Neoclassical economics and utility 68

Use value, exchange value and utility 70

B. Compensation and welfare economics 71

Consumer surplus 72

Pareto optimality 73

The compensation principle and social welfare functions 74

C. Compensation and property rights 75

Property 77

....81

D. Economic anthropology: substantivists and formalists 82

E. The Gift 84

The political economy approach 85

Political economy and hunting societies 89

F. Political economy and the Dene 90

Political economy and compensation 93

VI. Conclusions 94

A. Summary 94

B. Imputing value 96

C. Protecting a way of life through compensation and mitigation 100

Bibliography 103

I. Introduction

The valuation of subsistence activities among modern northern Native people was a response to the contention that the essential elements of their traditional lifestyle were destroyed with contact with the more developed capitalist economy. In more general terms, "acculturation theory", implied that less advanced cultures change to become more like the more advanced cultures with which they were in contact (Steward 1979:56-61). In the specific case of contact between hunting/gathering peoples and industrialized nations, it was hypothesized:

> "When goods manufactured by the industrial nations with modern techniques become available through trade to aboriginal populations, the native people increasingly give up their home crafts in order to devote their efforts to producing specialized cash crops or other trade items in order to obtain more of the industrially made articles." (Murphy and Steward 1968:408)

In Canada, support for this view of northern Native people and the "loss" of their traditional culture was given by Murphy and Steward for the Montagnais (Murphy and Steward 1968), Oswalt for the Chipewyan (Oswalt 1966), and VanStone for the Dene (VanStone 1963). These authors described the "inevitable" trend toward adoption of the traits of the Canadian capitalist system, evidenced by the spread of southern goods and technology, the reduction of pursuit of traditional bush activities by Native people, the loss by many young people of the ability to speak their Native languages, and the crippling effects of modern social problems such as alcoholism, unemployment, and poverty. The trends that they observed were seen as eventually resulting in the total breakdown of the Native way of life. Taken to the extreme, the only positive solution that could be envisioned was the integration of Native people into the mainstream of Canadian business life and total abandonment of the vestiges of tradition that would hamper this transition.

> "Euro-Canadian society has refused to take native culture seriously. European institutions, values and use of land were seen as the bases of culture. Native institutions, values and language were rejected, ignored or misunderstood and — given the native people's use of the land — the Europeans had no difficulty in supposing that native people possessed no real culture at all. Education was perceived as the most effective instrument of culture change: so, educational systems were introduced that were intended to provide the native people with a useful and meaningful cultural inheritance, since their own ancestors has left them

none." (Berger 1977a:Vol 1:xvii)

However, the predictions of culture loss and abandonment of traditional land based activities did not come to pass as expected. Northern Native people continued to pursue bush activities, and though aspects of their life underwent changes, many fundamental elements remained and many changes that were made were in the context of the traditional cultural values. Those familiar with northern Native groups in the late 1960's and early 1970's countered the arguments forwarded by the acculturation theorists about the death of the Native way of life with the living evidence of its viability (e.g., Rushforth 1977, Brody 1981, Asch 1982).

> "The data on the James Bay Cree specifically indicate that under certain conditions, hunting people are able to maintain significant parts of the communal fabric of their society and culture in the face of significant externally initiated changes and at least some dependences on international economic institutions and nation-state structures." (Feit 1982:403)

The work of these and other researchers was prompted largely by events taking place in Canada's north during the early 1970's. The north was at that time being "opened up" by southern industrial development projects and associated exploration. Native people saw how this activity was affecting their lives and began to demand a say in what was to become of their land. The controversy over whether traditional lifestyles continued to survive in the north and what the extent of involvement of Native people in traditional pursuits might be prompted a number of basic data-gathering type studies (harvest studies). The results indicated that in a great number of cases hunting, fishing, and trapping contributed a significant amount to the economies of northern communities. Due to the imminent impact of large scale industrial 'megaprojects' on these economies, it was necessary to quantify the bush elements of the economy in a manner comparable to the cash sectors of the economies to suggest the effects that industrial activities would have on the northern economies as a whole. Numerous valuation studies were conducted at this time. Their success in demonstrating the existence and veracity of traditional economic activities is evidenced by such agreements as the James Bay and Northern Quebec Agreement (1975), and numerous ongoing land claims negotiations, such as that of the

Dene and Metis of the N.W.T. and the Yukon Indians.

Acculturation theory could be said to have been answered, in the Canadian case, by the research and valuation studies of the 1970's. Subsistence activies are now being conducted by northern Native people side by side with industrial resource extraction activities, and, predictably, numerous conflicts have occurred. The tools developed by researchers in the previous decade were directed toward considering the impacts on the total Native economy and lifestyle of resource 'megaprojects' and other developments, whereas in the 1980's the questions have become those of the practicalities of particular conflicts occurring in many spheres. Where industrial activities actually damaged or destroyed the subsistence activities of an area (or appeared to have that potential), methods such as compensation, regulation, or relocation had to be considered. Once again, the actual value of the subsistence activity affected became a question. However, the results obtained in the studies conducted in the 1970's were too general, and often by now out of date, to be used for these more detailed and specific applications. As well, it is the contention of the present author that the techniques that were employed in the previous valuation studies are inappropriate for current purposes. This will be a major theme of this thesis. The nature of previous studies, their context and shortcomings, is the subject of Chapter Two. The issue of compensation and comprehensive claims will be discussed in Chapter Three.

The drawbacks of the previous valuation approaches, it will be argued, have implications for imputing value to the subsistence activities of Dene today. Chapter Four will describe some of these activities as undertaken by a group of people from Fort Good Hope, N.W.T.. The aspects of these activities which were described by the participants as being valued will be given as well, the object being to indicate what factors must be included by a valuation scheme seeking to show what can be lost when subsistence activities are curtailed.

The economic theory underlying the valuation studies of the 1970's, as well as the issue of compensation, is discussed in Chapter Five. These studies, by the nature of their objective of putting a price on subsistence products in order that they might be compared to cash inputs in the economies studied, drew their methods from mainstream market economics. Although the techniques employed, particularly the imputation[1] of substitution costs, proved to be successful in this endeavour, it is argued that they are not suitable for determining the compensation that is required when subsistence activities are reduced or curtailed by development activities. The reason is that the economic tools used to estimate the value of bush production in gross and general terms are not capable of taking into account the totality of values inherent in subsistence production. As a result, many elements of northern Native economies cannot be described, as they fall into the Economics category of intangibles.[2] More importantly, the northern Native economy itself, as a totality, can not be described using this framework. Therefore, other analytical means must be used to describe this production. The political economy/mode of production approach is proposed as having greater explanatory power than modern mainstream economics.

The thesis will conclude by attempting to demonstrate how this alternative economic model of the Dene economy provides a way of including those elements formerly excluded as intangibles in the approach used by the studies of the 1970s. The object is to show how these intangibles fit within Dene economy and society, and thus to enable a more complete picture of what values are at stake when subsistence activities are threatened. As well, the effectiveness of compensative and mitigative measures to adequately protect the ability of Dene to conduct bush-subsistence activities is questioned. It is suggested that what is required instead is the political authority to control land-use activities on lands required to sustain bush-subsistence production.

---

[1] Impute is defined: "This term is used in economics to indicate an ascribed, estimated value when no criterion of absolute monetary value is available. For example, the owner of a house might estimate the imputed rent of it." (Taylor 1980:140)

[2] An intangible asset is defined as "an asset of no material substance, e.g., goodwill." (Taylor 1980:6)

II. Chapter Two. Valuing the subsistence production of northern Native economies: a critical review of previous research

A. Review of previous research

Context and objectives

With the spread of large scale non-renewable resource extraction and energy industries to northern Canada, particularly in the 1970's, northern communities became the subjects of studies to determine the makeup of their economies. Cash inputs, in the form of wages, commodity sales, and transfer payments (such as social assistance and family allowance), were not too difficult to calculate as records were available on these sorts of activities. However, the contribution of the subsistence sector, specifically "bush food" and other products derived from renewable resources, were not so easy to describe. Problems were encountered in determining precise quantities of resources harvested due to the lack of records on products which did not enter the market but were consumed domestically. To alleviate this problem, detailed recording was undertaken in the form of harvest studies (e.g., James Bay and Northern Quebec Native Harvesting Research Committee 1982, Bisset 1974).

Collecting data on how much bush food was harvested was only one part of northern economic studies. Once suitable figures were arrived at, a method of comparison with the money/market sector was required, in order to demonstrate the relative importance of each. To accomplish this, a number of techniques were employed to convert the values of the subsistence products to an understandable quantity, most often expressed in monetary terms (price). Most researchers experienced difficulties in assigning monetary values, though the results that were obtained were generally considered to be sufficient for the task at hand. The subsistence sector, in general, was shown to be active, significant, and important. The specific methods of determining cash value that were employed, and their limitations, have implications for evaluating the present status of subsistence activities.

Methods and shortcomings

Research on the value of northern bush products has been undertaken by a variety of disciplines and approached from a number of perspectives. Studies have been conducted for major resource development projects, Native economy studies in various social science fields, wildlife studies in biological sciences and recreation, and in the field of health and nutrition. Many of these studies employ similar techniques and rely on the same body of theory for their methodology, due to the practical problem-oriented nature of their objectives. Thus, there is much duplication of techniquies used to impute value to bush products. For that reason, an extensive review of such studies would be highly redundant, and instead a selection of projects chosen both for their relevance to the Fort Good Hope situation and to represent the range of techniques employed will be presented here.

The valuation methods and a number of other terms used by the authors reviewed are defined as follows:

> "Imputed Value - refers to the valuation of a non-market activity, (a) where the non-market activity results in the production of useful goods or services that are consumed and (b) the non-market activity can be compared to a market activity or transaction and therefore a value can be assigned to the non-market activity. There are three methods used to impute values for traditional activities:
> (1) Local Exchange Value - values goods using the sale price that one person would charge another within a community if the commodity were to be bought, sold or bartered locally.
> (2) Opportunity Cost - values goods on the basis of the foregone or lost value of the best alternative uses which the inputs could be applied, e.g. the traditional (non-market) activity versus market (i.e. wage) activity.
> (3) Substitution Cost - values goods at the dollar cost of replacing the goods produced from traditional activities with similar goods which could be made available from the market." (Pavich 1984:6)
>
> Direct Consumer Surplus - measures the willingness to pay for an additional unit of product or "recreational experience" (Langford and Cocheba 1978:6).

B. Large scale resource development projects

Two non-renewable resource related 'megaprojects' of the 1970's spurred much research into northern Native economies, and were symptomatic of the myriad of industrial impacts occurring in the north at that time. The Mackenzie Valley Pipeline project resulted in considerable research, debate, and hearings on the effects of the construction of a large pipeline through the Mackenzie River valley from the Beaufort Sea to Alberta (Berger 1977a). In northern Ontario and Quebec, the James Bay Hydroelectric Project had a similar effect. Native people who were affected by these projects found it necessary to document details of their land use, its duration, location, and economy, in order to demonstrate the legitimacy of their interest in the land and resources.

The Mackenzie Valley Pipeline Project

The Berger Inquiry (Berger 1977a) into the effects of a major pipeline development in the Mackenzie Valley, NWT, described the northern economy and recorded the opinions of Native and non-Native residents on this sort of development. The report emphasized the viability of the northern Native economy and culture, the desire to continue this lifestyle, and to participate in changes in a positive and determinative manner (Berger 1977b:8-10).

As part of the inquiry, an assessment was made of the value of the bush sector of the economy. On the topic of the valuation of country food, Berger recommended using the "replacement value", or the amount that it would cost a Native person to buy a replacement item from a local store.

> "... the true extent of the native economy is difficult to measure; it cannot easily be reduced to statistical form. Gemini North [(1974)] attributed to country food the price that one person would charge another for a commodity, say caribou, within a native community. This method of calculation ignores the fact that the distribution and exchange of country food takes place within the context of kinship obligations and family ties; it is nothing like an ordinary market transaction. So, if we are to understand the real economic value of country food, a standard other than "local exchange" must be used. It is clear from the evidence that the standard that should be applied is the "replacement" value, that is, the amount it would cost a native person to buy from the local store the imported equivalent of the country food he now obtains from the bush and the barrens. It must be plain to anyone that if native people did not or could not obtain country food, they would have to buy meat and fish from the store to replace the food they get now from the land." (Berger 1977a:101)

James Bay Hydroelectric Project

In 1971, the premier of Quebec, Robert Bourassa, announced plans for the James Bay Hydroelectric Development Project. He justified the project on the basis of job creation and the need for electricity for industrial and domestic use.

> "Indeed it seems evident that the use of energy, in all its forms, is both the measure and means of attaining an advanced state of well-being and economic development - the characteristics common to all modern societies." (Bourassa 1973:13)

The impact on subsistence activities carried on by the Native groups of the James Bay area of the massive hydroelectric project was promised to be positive, though these activities were not taken particularly seriously:

> "A similar policy of cooperation and exchange of views has been adopted in regard to the hunting and fishing territory of the Indians even though the most recent studies show that income from these activities counts less and less in their total revenue. A report by professors Hawthorne and Tremblay, published after six years of research, pointed out that only a tiny minority of Indians live solely off hunting and fishing in the James Bay territory. This is understandable since social benefits make up a relatively important portion of the Indians income. ...
>
> Aware of this basic economic reality, I directed that absolute priority be given to native peoples in hiring for James Bay development. Concurrently, courses in technical and professional training are being given to Indians in the territory in order to enable them to obtain general and specialized jobs. Other Indians could be hired as fire and game wardens. Still others could set up outfitter camps to receive tourists who travel to the territory. ... Furthermore, the creation of reservoirs will allow easier access to hunting and fishing grounds. It will also enable the Indians to develop commercial fishing. Catches could be sent to the large southern consumer centres by rapid road. ..." (Bourassa 1973:83-85)

This paternalistic impression of northern Quebec Native cultures as moribund and destined to become increasing burdens on the state unless employed in various capacities of some use to southern interests required considerable documentation to counteract. One immediate study was initiated and directed by the James Bay Cree people in 1973 (Weinstein 1976). The report presented an analysis of the results of harvests and harvest geography of the subsistence hunters of Fort George. The contribution of food from subsistence activities was calculated in pounds produced, and demonstrated the importance of these activities to the economy and lifestyle of the James Bay Cree. The report concluded with the impacts of the James Bay Hydroelectric Project, such as providing satisfactory and workable replacements for lost land for displaced hunters, and 'remedial' harvesting alternatives in areas where lost land forced overexploitation of other areas (Weinstein 1976:219,221).

A reluctance to indicate the product of James Bay hunting in cash terms was also expressed by Salisbury *et al*(1972). The amount of food obtained by hunting was described as a percentage of the total food acquired. However, a cautious cash conversion was arrived at:

> "To interpret the value of hunting solely as a means of subsistence and to give it a cash value would be objectionable to most Cree, as hunting is a way of life. It involves a religious sense of being in harmony with the forest and the animals, and the pattern of dispersed living in the bush with intermittent gathering at times of plenty is basic to Cree culture, and to its image of what an adult should be capable of doing. Hunting also provides employment with a sense of dignity and independence to the hunter. Nonetheless a cash income can be imputed. Three pounds of meat at a retail price of $1.50 per lb. - an average retail store price in Montreal for various cuts - would mean that each adult consumption unit fully supplied by bush foods would equate with $4.50 per day. To this might be added a value of 50 cents per day for fuel for heating and cooking. A typical hunting family of [3.5] consumption units (roughly two adults and three children) would thus earn the equivalent of $17.50 a day if it fed and housed itself entirely from the bush, or $14.00 per day if it included 20% of store-bought food in its diet. On a twelve month basis this is equivalent to $5,110, plus a cash income from sale of furs to 600 families of $500 each, making a total of $3,864,300 in kind plus $300,000 in cash or $4,164,300 per annum as the total James Bay Cree income from the bush.
>
> There is no question but that a majority of Indians wish to preserve their hunting way of life. ... They wish to preserve their Indianness while accepting technological improvements to the way of life." (Salisbury *et al* 1972:50-51)

C. Native economy studies

A great number of studies of northern Native economies were conducted during the 1970's and early 1980's. Though not necessarily directed toward supplying information for specific industrial projects, they were responding to the situation of the efflourescence of development in the north. In general, they were done by social scientists -- anthropologists, geographers, sociologists -- and reflect the points of view of these disciplines, including a social element in economic analysis. Chronologically, the ideas that were generated were as follows.

Chang-Mei Lu

One of the earliest and most direct valuation studies was that of Chang-Mei Lu, *Estimation of the Net Imputed Value of Edible Subsistence Production in the Northwest Territories*, 1972. The author succinctly stated the context and objective of this kind of study:

> "Owing to the discovery of natural resources and the need to establish Canadian sovereignty, the Federal Government has given greater attention to the North in the recent years than it did in the past. ... Although the socio-economic situation of the indigenous people in the North is changing, the traditional way of life (hunting, trapping and fishing) still plays an important role in the northern economy... In order to understand and measure the standard of living, it is essential to estimate the imputed incomes of subsistence production obtained from traditional activities." (Lu 1972:1)

Lu used an analogy with another form of subsistence production -- that of farmers who consume part of their crop.

> "The level of income is one way of measuring the standard of living. Income includes cash income, earned and unearned, and income in kind. In the farm income account, one method of imputing income is by valuing the products grown and consumed by farmers at market prices, i.e., the price the farmer would receive if the produce had been sold. Using this method, income in kind of the indigenous people in the North should be calculated from the number of animals caught for food valued at the producer's price. Net imputed income could then be obtained by subtracting the associated total cost from total imputed income." (*ibid*,2)

However, the situation in the north had a basic difference to that of agriculture.[3] The market value of subsistence products in the north was not available from what they would fetch when sold, in that they were not sold. Thus, a substitute that was in some manner eqivalent to the subsistence item but which had a market value, was used.

> "In this study, the wholesale price of substitutable commodities is taken as the producer price for subsistence production. The wholesale price of reindeer meat in the Mackenzie Delta region in 1970, for example, is used on the assumption that if available reindeer meat would be the most likely substitute for caribou meat for the native people." (*ibid.*,3)

Here, Lu assumed that replacement caribou meat could be obtained by the Native consumer at wholesale prices, for some reason. This price so determined was then extrapolated to other species, assuming the general equivalence of each in terms of food value and cultural food preferences.

---

[3] Chibnik (1978) argues that subsistence agricultural production would be valued at retail cost (cost to buy) versus wholesale (selling) price, as this is the cost to the farmer to replace these goods and therefore the amount required in decision making regarding the allocation of resources (Chibnik 1978:571-573).

> "The average net imputed income for caribou,...., sixty-five cents per pound of edible meat for human food, is applied to other species such as Moose, Deer, Sheep, Whale, Walrus, Muskox, etc., due to lack of information about these species. Our assumption is that the value of subsistence production taken for human use is equally worthwhile to native people regardless of the variety of game hunted. For Beavers and Muskrats it is assumed that the average cost of production is, as in the case of caribou, 11% of the average producer prices of fifty cents per pound and ten cents per pound respectively."(*ibid.*,4)

Lu qualified the results obtained, saying that the real stumbling block to imputing value is determining producer costs (*ibid.*,1,2). Due to this difficulty, and the general substitutions which must be made, the result is "no more than intelligent estimates"(*ibid.*,7). In addition, the value of subsistence fishing is not included, due to lack of data on this activity

Edward S. Rogers

Rogers conducted a study of the hunting and trapping activities of a group of Mistassini Cree in 1953-54, which was published in 1973. The stated purpose of the project, unlike most of the others reviewed here, was to show the implications that such activities have for archaeology, and to record the Mistassini adaptations to the subarctic environment and to the incursion of Europeans (Rogers 1973:76). Rogers did not attempt to impute a cash value to the subsistence production of the Mistassini (though he recorded the cash acquired through fur sales), however he did collect quantitative measures of this production: pounds of food obtained and hours of work per man per week in hunting, fishing, trapping, and requisite travel. He then calculated the poundage of game produced per man-hour per week according to particular seasonal periods, to give a picture of the productivity of men engaged in hunting and trapping activities (*ibid.*,78-82). The actual nature of the activities and their cultural context were described in detail in the study.

John Palmer

John Palmer in 1974 authored a report for the Department of Indian Affairs and Northern Development entitled *Measurement of the Value of Economic Activity in the North*. In it he sought to develop a system of economic accounts for the NWT. He stated:

> "... an important part of the northern economy is tied to the traditional hunting, trapping and fishing subsistence way of life. It is not possible to estimate the value of the noncash aspect of production in this sector in dollar terms except in a very crude way. A value for 1969 for the Northwest Territories was estimated in *Social Accounts for the North, Interim Paper No. 3* on the basis of 'equivalent values." (Palmer 1974:27)

> "As there is virtually no free trade in hunted produce there are no market values to assign to it. The only alternate method is to arbitrarily set a price for this produce on the basis of the price of close substitutes. This cannot be done with any degree of accuracy." (*ibid.*,8)

Derek Smith

Contrary to Palmer's use of 'equivalent values', in a 1975 study, *Natives and Outsiders: Pluralism in the Mackenzie River Delta*, Smith endeavoured to determine local exchange rates for wild food. This was done in the context of the stated objectives of the study:

> "The Mackenzie Delta Research Project is an attempt to describe and analyse the social and economic factors of development in the Mackenzie Delta. Particular emphasis has been directed toward the participation of the native people of the area, and the extent to which they are making effective adjustments to changes brought about by government and commercial expansion in the north." (Smith 1975:ii)

Data on the numbers of animals harvested was collected through interviews with local hunter/trappers and by direct observation. The amount of usable meat was determined by observing how the animals were used. Then the price per pound was obtained through calculation of a "cash-equivalent value" for meat used domestically, based on what it would fetch if sold locally. Smith encountered three major problems in this calculation:

> "Cash-equivalent values are extremely difficult to determine, because (1) it is illegal in some cases to sell certain species and transactions may be concealed (in this case, values given are determined on known cases of cash exchange); (2) several prices may be current for a given type of wild food (prices charged between Native people differ for dog feed and food for human consumption, some foods are sold to traders who in turn charge another range of prices); (3) the amounts of various types of food for which prices are charged are small compared to the amounts self-consumed by producers and the amounts which change hands in traditional sharing exchanges. One cannot be sure of the legitimacy of generalizing prices based on small amounts of total catches." (*ibid.*,166)

However, he concluded:

> "Fully realizing the limitations to determination of cash-equivalent values we nevertheless present our figures as the most reasonable estimate possible." (*ibid.*,166)

Milton Freeman

Published in 1976, the *Inuit Land Use and Occupancy Project* detailed the land use, occupancy, its prehistoric and historic evidence, and culture of the Inuit of northern Canada. The study was initiated by the Inuit Tapirisat of Canada to provide documentation of Inuit use of the land.

Freeman did not endeavour to impute a cash value to the subsistence production of the Inuit in this study, or to quantify the products in any fashion. Rather, the significance of subsistence production was represented areally, by showing the extent of territory and environments utilized by the Inuit for hunting, fishing and trapping activities, through maps and accompanying descriptions (Freeman 1976:Vols.1,3).

In a 1981 publication, Freeman summarized the implications of difficulties in valuing subsistence production.

> "Despite the various changes occurring in the Arctic and subarctic regions as industrial and commercial activities move northward and intensify, renewable resources continue to be important to people living in these regions. However, as only a small part of the local renewable resource harvest actually enters the market economy, these resources and associated activities are generally and seriously under-represented in assessments of the regional economy. This causes the overwhelming focus of northern development planning in Canada to rest upon large-scale, capital-intensive, non-renewable resource projects, despite the fact that today, as in the past, considerable economic and social value resides in the continuing utilization of traditionally-important local resources." (Freeman 1981:iv)

Peter Usher

Usher has devoted considerable time and effort to the study of hunting and trapping in the north and its economic, political, and social implications. He produced reports ranging from detailed studies of a specific area (Banks Island, Usher 1970), to numerous issue-focussed reports on the economics and politics of Native wildlife harvesting (Usher 1972, 1976a, 1976b, 1977, 1981, 1983, 1984).

Usher's 1976 report, "Evaluating country food in the northern Native economy" (Usher 1976a) dealt specifically with the question of valuing subsistence production. He contextualized his study by noting how the traditional sector of the northern Native economy was not declining in favour of the modern sector, contrary to the expectations of many southerners. However alterations in the significance of traditional production had occurred, and conflicts between the two sectors resulting in serious threats to hunting and trapping activities were being posed. He criticized Economists for failing to seriously consider northern domestic production and either omitting it from their calculations or attempting to integrate it with the modern sector (*ibid.*,105-106). He outlined his objectives as:

> "The general problem of measurement may be seen to fall into three parts: first the determination of the actual volume of production and its disposition and use; second, the evaluation of income in kind, specifically imputing a cash value to country food which is consumed domestically; and third, the examination of the intangibles involved in any direct comparison of the modern and traditional sectors of the economy, and the limits which these place on imputing a value in kind." (*ibid.*,106)

Usher reviewed the valuation studies of previous authors, commented on their results and then evaluated the options of methods used. He described three methods for determining values for 'income in kind': utilizing opportunity costs, being the value of a product if it were sold rather than domestically consumed, as used in agricultural economics; local exchange rates or the prices assigned to commodities when exchanged among hunters and trappers; and substitution costs, or the price of a reasonable substitute market item. For this study, Usher used the substitution cost to calculate the role of the subsistence sector, offering as criteria for this selection its practicality over the other methods. Local exchange rates were not available and were dependent on social relationships between parties to the exchange. Opportunity cost was problematic because northern subsistence products are not customarily marketed, so their market value is not known. Although he cautioned that the choice of assessment procedure should be geared to the use for which the value is to be put, substitution costs were seen as being the most practical to calculate (*ibid.*, 109-112).

Usher credited welfare economics[4] for substitution cost:

> "Substitution cost is a welfare-equivalent measure, since it provides the answer to the question: "If a man did not, or could not, obtain country food, how much would it cost him to feed his family by buying the equivalent food at the store?" (*ibid.*,112)

He pointed out that the method employed should suit the task at hand:

> "Ideally, the choice of measurement should be a function of the objective at hand. Palmer (1974) correctly distinguishes between a market-equivalent and a welfare-equivalent value. If one seeks to measure the contribution of the native economy to the national economy, then a market-equivalent index, such as local exchange value or opportunity cost, would seem more appropriate. On the other hand, if one seeks to measure the welfare of the individual participating in the traditional sector - perhaps to compare it to that of the individual in the modern sector - then a welfare-equivalent index such as substitution cost is necessary." (*ibid.*,113)

For evaluating the losses due to the non-renewable resource extraction activities:

> "With respect to more specific issues of the potential impact of development, the choice depends on the perceived nature of the problem. If one can be sure that no conflict exists between the harvesting of modern non-renewable resources and that of traditional renewable resources, due either to environmental or socio-economic factors, so that people will truly and invariably be free to participate in either sector, then market-equivalent measures are appropriate for establishing which activity makes a greater contribution to the total economy. If, on the other hand, there is a conflict, and the two activities prove to be mutually exclusive, then welfare-equivalent measures must be introduced, since the proposed development will obviously affect the welfare of the traditional users of the land." (*ibid.*,113)

Thus, for theoretical and practical reasons, Usher justified the use of the substitution cost method.

The cost of production, which Usher estimated to be 25% of the imputed value of the food consumed in the western arctic, must be deducted from the value of the food produced, but data upon which to base this calculation are difficult to determine (*ibid.*,116).

To qualify the utility of the calculation, Usher examined the intangibles, which are important but non-quantifiable considerations. Among them he included the issue that not all forms of income are equal, some offering more flexibility in their disposition, some more prestige. Also, market food may be the closest possible substitute for country food, but it is not equivalent in taste preference, nutrition, satisfaction, or the cultural practices of procurement, distribution, and consumption. Usher stressed this last point:

---

[4] welfare, in the economic sense refers to personal and social well-being, or quality of life. (Usher 1976a:112)

> "Country food has nutritional, social and cultural values which cannot be replaced by any substitute and cannot be measured by market criteria or evaluated in cash. In short, food is an integral part of a way of life. The importance of that way of life and the land which it sustains has been documented elsewhere - most recently and thoroughly by Freeman (1976) and Usher (1974). It is evident that the problem of imputing values to country produce in the North is not analogous to imputing values to home garden produce in the South." (*ibid.*,118)

Usher distinguished between the value of the product and the value of the activity conducted to obtain it, and the implications that this had in compensating for disturbances:

> "If hunting is more than the mere act of obtaining food, then it follows that an evaluation of country produce does not thereby amount to an evaluation of the activity of hunting. Much less so can it indicate the value of the lands from which the produce was obtained. It may be tempting to imagine that if only one could calculate the productive value of land used for traditional activity, then in the event of its being disturbed due to some major development project, it would be a straightforward matter to assess the proper compensation for the damage caused in terms of future production foregone - just as is done when areas of farming land are taken for highways, power pylons or oil wells. But the analogy is inappropriate, and the temptation must be resisted. The nature of the northern environment as a productive habitat is entirely different from that of southern farmlands or forests. It is frequently all of one piece, so that the elimination of any one part of it may reduce the value of the whole disproportionately.
>
> There is no way one can evaluate a way of life, and there is no way to compensate for its loss. Modern industrial society commonly fails to distinguish peoples' livelihoods and their ways of life, too often supposing that compensation for loss of the former is sufficient for the loss of the latter as well. The increasing resistance to this supposition by native people, as well as by some Canadians in the South, is good evidence that it is fallacious." (*ibid.*,118)

Scott Rushforth

Rushforth researched in the area of Great Bear Lake, NWT, in 1974-75 and produced a study of land use by the Bear Lake people for the Indian Brotherhood of the NWT for submission to the Berger inquiry (Rushforth 1977:46). From this research, he published an article in 1977, entitled "Country Food", in response to certain allegations:

> "Developers, such as pineline applicants, frequently allege that the Dene no longer rely substantially on country food derived from traditional use of the land." (Rushforth 1977:32)

In his article he gave a brief summary of land-use activities, the number of male family heads participating, approximate edible weight of food produced, and he then calculated the 'replacement value' (Usher's 'substitution cost') of this food. Rushforth cited several shortcomings of this estimation, particularly the ways in which the subsistence products and the 'suitable' replacements are not equivalent.

> "A simple 'replacement value' is used in spite ofthe fact that 'country food' has several characteristics which make it even more valuable than the food with which it is replaced." (*ibid.*,42)

He gave a brief description of some of the values inherent in subsistence production which are not quantifiable: participation in a way of life requiring hard work, industriousness, generosity, mutual support, and the cultural continuity of these values with ancestors (*ibid.*,45-46).

Michael Nowak

Nowak described the economic activities of a Native people engaged in subsistence activities in southwestern Alaska, and took an approach unlike others reviewed here to calculate the value for the products obtained in traditional subsistence activities. He utilized opportunity cost, or the cost of equipment, labour, etc. used in subsistence pursuits if applied to the next most profitable use, but with a difference:

> " ... a breakdown is provided of the annual expenses involved (at 1975 prices) in the acquisition of foods by an average family of six persons, and hence the costs per pound (kilogram) to them of the various items." (Nowak 1977:226)

He then reasoned:

> "In the calculations, no money values are imputed to the periods of time spent in hunting and fishing, because the persons concerned participated in these activities at time when they were not normally engaged in wage labour (i.e., holidays and vacations)." (*ibid.*,226)

The equipment costs which he suggested determine the value of the products obtained, should then be amortized over a "primary life-span" of four years (the replacement rate), a concept which he said traditional hunters had difficulty with (*ibid.*,227). The current reviewer also confesses some confusion regarding Nowak's use of certain terms and concepts, such as referring to the expenditure involved in the acquisition of traditional foods as savings, and the food obtained as expense.

> "It is demonstrated that while it is difficult to arrive directly at values for the products of traditional subsistence activities, such values are necessary for making an assessment of the actual and potential savings realizable through the use of traditional foods. These savings can account for one-quarter of the total real income of a family, although it is possible that inflation will decrease this amount in the future. The cost of basic equipment required for traditional subsistence activities and the total amount of flesh obtained are the primary determinants of final expense to the hunter." (*ibid.*,225)

W.D. Brackel

A report on the socio-economic importance of marine wildlife utilization by communities in the Mackenzie delta and adjacent islands was published in 1977. Brackel, the author, identified two areas having different marine wildlife utilization patterns: the Rim, consisting of the communities of Holman, Paulatuk, and Sachs Harbour, and relying largely on fur-bearers; and the Mackenzie communities of Inuvik, Aklavik, and Tuktoyaktuk which depend mainly on fish (Brackel 1977:41).

Brackel imputed a cash value to these resources, after first presenting a disclaimer on the difficulties of the task.

> "A technical limitation restricts the addition of dollar values of different resource uses. Values for domestic or subsistence use are not equivalent to values for commercial use and must be treated separately. This distinction is based on the derivation of these values and their economic bases.
>
> Domestic or subsistence values are based on 'shadow prices', or the assumed cost of producing these goods within the local economy. However, no revenue is ever received for these values, since the producer consumes his own product. Moreover, domestic values have no relationship to the cost of purchasing substitute goods if wildlife were not available." (*ibid.* ,7)

The method that Brakel selected relied on the cost of local commercially produced substitutes. For fish:

> "Domestic fish have been valued from $.10 to $.30 per pound, without regard for species or use ... The selected value is the most recent and is consistent with other domestic foods and with local sales by commercial fishermen - 'one dollar for small ones and two dollars for large ones'." (*ibid.*,19)

Kenneth Bodden

In his MA thesis on the use of the resources of the Slave River Delta by Native people, Bodden sought to demonstrate the economic importance of these resources to the community of Fort Resolution. He cited the failure of past researchers to measure the economic value of this production, thus leading to the mistaken impression that these activities were of limited importance, as compared with the wage and social assistance sectors (Bodden 1981:v).

Bodden reviewed the valuation studies of Palmer, Lu, Schaeffer, and Usher. Following the suggestions of the latter, he utilized the substitution method:

> "No country food (fish or game meat) is sold in the retail outlets of Fort Resolution and little country food is sold or exchanged within the communtiy. The small amount that is available is usually sold to relatives or friends. Quite often the exchange is made in return for favours or the loan of equipment rather than cash.
>
> Since Fort Resolution does not have a consistent local market value for country food and previous subsistence studies have successfully used substitution, this study has used substitution to convert country food production to a cash value. The costs of comparable, locally available imported southern food stuffs were obtained from stocks on hand in the community's two retail outlets during June 1977." (*ibid.*,43)

Bodden remarked that the substitution cost calculation ignores the differences in nutritional value of southern and bush food, the latter being recognized as superior, and 'intangibles' of cultural preference and taste (*ibid.*,43).

Bodden concluded:

> "Hunting/fishing/trapping provide cultural, economic and social benefits that make them attractive to many natives despite the heavy workload associated with them. The ability to pursue these activities must be maintained by and for the native population of Fort Resolution." (*ibid.*,133)

Michael Fisher

In a 1981 thesis, Fisher evaluated methods of valuing Native subsistence fish and marine mammal harvesting in the NWT. He considered three measurement methods: local exchange value, opportunity cost, and substitution cost (Fisher 1981:39). Although problems were associated with each method (little exchange occurs for money; opportunity cost relies on measuring the value of labour and other inputs when applied to the next most profitable use, however alternative employment is lacking and doesn't reflect specific skills; and the substitutable product - beef - isn't comparable with marine mammals and fish, and doesn't take into account cultural food preferences), Fisher decided on substitution cost as the only logical method. He recommended the use of the correction factor suggested by Berger of increasing the cost of beef by 1.8 to account for the incomparability of the products valued. However, he cautioned:

> "An important consideration to include is that the valuation of meats that would technically replace subsistence fish and marine mammal meat, cannot honestly hope to place a dollar value on what these meats mean to native peoples. It is impossible to value a way of life, and this should be recognized at an early stage in the valuation process." (*ibid.*,58)

Mary Pavich

In a report for the Department of Indian Affairs and Northern Development released in 1984, Pavich reviewed methods of imputing value to traditional activities in the NWT and Yukon from 1967 to 1974. Her objective was to include the values imputed for traditional activities into the Economic Accounts of each territory and she cautioned that the methodology used was not necessarily suitable for other purposes (Pavich 1984:5). The sources to which she devoted the most attention were Palmer, Berger, and Usher.

Pavich outlined the National Accounts to show the context to which traditional subsistence production values must be transformed. Economic Accounts "display the various financial transactions among the sectors of the economy which create or add value to production" (*ibid.*,9). The National Accounts include some non-market transactions as well, although others are omitted. Those included can be valued because similar goods are available on the market, i.e., imputed rents associated with owner-occupied housing, farm products grown and consumed directly by farmers, food and lodging provided to employees in lieu of wages, depreciation on government gross fixed capital formation, and the value of services provided by banks and financial institutions for which there is no charge. Items not included are those for which there is no satisfactory method of valuation based on market criteria, such as housework, the production of domestic goods (candles, soap, jams) and the products of traditional subsistence activities by northern Native people (*ibid.*,9-10).

Pavich evaluated three imputation methods: local exchange value, opportunity cost value, and substitution value. She selected substitution for her purposes because "all imputations must be linked as closely as possible to equivalent market transactions for similar goods, since the Accounts and the measurement of production are based on the market." (*ibid.*,15). She rejected local exchange value since these sorts of exchanges are not linked to the market, and opportunity cost is evaluated in terms of alternatives rather than linked directly with similar market transactions (*ibid.*,15-16).

In applying the substitution cost method, Pavich made several simplifying assumptions:

1. Income in some form would be available to purchase meat from the market if traditional sources were extinguished.
2. Meat at the market would continue to be available at current prices.
3. The nutritional value per pound of market meat is equivalent to that of the wild meat it would replace (this must be assumed although it is known that the nutritional value of game meat is higher and that Native people prefer game meat).
4. The amount of meat purchased would be equal in weight to that taken from bush activities (this assumes that non-meat foods would not be substituted for meat).
5. All meat taken in the Territories would be consumed in the Territories.
6. When substituting meat obtained from the market for unavailable game meat, it is assumed that meat consumed would be in accordance with consumption patterns for various cuts and types of meat for other Canadians.
7. All edible meat for human consumption produced from traditional activities would be consumed. (*ibid.*,17-18)

Pavich then went on to determine the species and amount taken of game meat for human consumption for each Territory, the quantity of edible meat per species taken, and the value of the edible meat (*ibid.*,19-26). Following Usher, Pavich argued that non-food uses of game animals amount to about 10% of the total value, so value was calculated only for meat for human consumption (*ibid.*,8).

Pavich ultimately assigned a price to game meat based on the retail price of meat in Edmonton and Vancouver, adjusted for higher prices in the Territories. Various cuts of beef, poultry, and fish were used as analogues for wild meat. The estimates of the total value of wild meat also included costs of equipment used in its production. From Lu and Usher, she obtained a production cost range of 11% (Lu 1972) to 25% (Usher 1976a) of the value of the meat produced. A value of 25% was deducted from the total value of edible meat to arrive at a net imputed value of traditional activities (Pavich 1984:23-24).

Pavich's report is descibed at length here due to the explicit recording of assumptions that were made in order to achieve the valuation, and the detailed description of the purpose for the valuation. Throughout she reported what approximations and averages were used and where figures were obtained. The outcome is itself very general and approximate, and such features as a decline in the value of traditional production activities due, in part, to a decline in meat prices used as substitutes are illuminating implications inherent in these sorts of calculations (*ibid.*,31).

D. Wildlife Studies

The products of subsistence activities in the north derive from renewable resources: animals and plants. The animal products are given the most attention in valuing, and are also valued in the fields of biology and recreation as 'wildlife'. The perspectives and methods utilized in these studies vary notably from those of the social science disciplines, as do the objectives of the projects, which are often directed toward wildlife management. This approach is examined briefly here for its alternative implications for Dene subsistence activities.

James A. Crutchfield

In 1962, Crutchfield published a paper on the valuation of fishery resources, growing out of a larger study supported by the Department of Fisheries of the State of California. This study influenced numerous subsequent researchers in this field.

Crutchfield considered commercial and recreational use of fishing resources (subsistence use was either insignificant in California or omitted for other reasons). The calculation of gross benefits was relatively straightforward for commercial fisheries, he said, although the measurement of costs and the calculation of net benefits introduced additional considerations, specifically the economics of a common property resource. An alternative was the regional income approach, to evaluate the contribution of commercial fishing to a regional economy, which Crutchfield rejected as being impracticable due to the lack of appropriate data (Crutchfield 1962:145-147).

In valuing recreational fishing, Crutchfield noted that the 'product' to be valued is fishing, rather than fish. Briefly, he concluded:

> "Efforts to relate the value of sport fishing even to a complete measure of costs providing it will not provide answers to the really crucial policy decisions which concern us.
>
> ...attempts to impute a value to recreation based on a mechanical relationship of leisure hours to GNP are incorrect in principle. The numbers produced cannot be related in any meaningful way to the concept of net economic yield against which fisheries, like all other resource users, must be tested. ...
>
> No overall formula for determining the net economic yield of a sport fishery, and hence its capitalized value, can be devised. What we seek, in the interest of simplicity and accuracy, is a uniform set of valuation principles applicable with some modification to all income-producing resources." (*ibid.*,153)

William A. Langford and Donald J. Cocheba

In 1978, the Canadian Wildlife Service published a paper by Langford and Cocheba critically reviewing the problem of wildlife valuation. The report assumed the goal of this valuation was to provide information which could be used in making wildlife management decisions. The most basic problem in this area was to determine optimum population levels of wildlife species (Langford and Cocheba 1978:5).

After briefly discussing and dismissing the travel-cost method (Hotelling-Clawson-Knetch) (*ibid.*,14), the valuation technique which was chosen as the most appropriate was the 'Direct Consumer Surplus' (DCS) method. The DCS can measure the willingness to sell a resource when it is being transferred to another, incompatible, use or the willingness to pay for a given additional quantity of the resource. Langford and Cocheba utilized the latter calculation.

Like Crutchfield, Langford and Cocheba assessed the value of the activity rather than the animal obtained:

> "... the individuals who provide the necessary data can be expected to think in terms of the value of activities rather than the value of the animals which help to produce the activities." (*ibid.*,11)

The authors identify a number of sources of wildlife values:

1. recreational hunting
2. non-hunting activities
    - a. wildlife-based activities, e.g., study, observation, photography
    - b. wildlife-related activities, e.g., hiking, camping, canoeing
    - c. endemic wildlife activities - pursued in the immediate vicinity of the resident's permanent home.
    - d. recording-based wildlife activities, e.g., movies, records, photographs, painting and carving
3. existence value - satisfaction derived from knowing that wildlife exists (contemplative wildlife activity)
4. option value - value for an individual or their successors of participating in a wildlife activity in the future
5. other values
    - a. meat hunting for private consumption

Research uses and commercial hunting were not considered, as this study focussed on private, non-market consumption (*ibid.*,7-8).

Valuation was accomplished by analysing questionairres on hypothetical questions, e.g., "how much more would you be willing to pay to hunt/for a 5% increase in mallards?" The answers were obtained in a bidding-game approach, where respondents reacted positively, neutrally or negatively to cost changes in visiting a recreation area (*ibid.*,26-27).

Certain management implications emerged from the consideration of collective-good benefits over private-good benefits:

> "The nature of a collective good is such that under some circumstances relatively small collective-good values can result in very large aggregate values. ... Conversely, the killing of an animal may generate relatively high values per occurence but, since this value can only be realized once, the resulting aggregate value may be small.
>
> Correct recognition of the nature and importance of collective-good benefits vis-a-vis private-good benefits is likely to suggest major changes in wildlife management policies - particularly in the case of hunted species. Therefore, the relative size of collective-good benefits as compared to private-good benefits is an empirical question of considerable importance." (*ibid.*,32)

Langford and Cocheba conclude with a qualification:

> "Quantification of wildlife values remains a formidable challenge and there are no available valuation techniques which are without serious limitations. No matter what technique is chosen, it is not reasonable to expect high degrees of precision in the resulting estimates. Nevertheless, defensible approximations of aggregate marginal benefits can be extremely useful for making rational decisions." (*ibid.*,32)

Peter Usher

Usher produced a report for the Canadian Wildlife Service on the value of wildlife in Northern Canada, published in 1983, in which he specifically addresed the values and uses of wildlife by NWT residents. He therefore included subsistence values along with recreational and consumer values, and considered the problem of valuing a way of life (Usher 1983).

Usher detailed the uses to which valuation of resources is put by wildlife managers:

> "- as a guide to setting appropriate management budgets.
> - in order to compare the costs and benefits of ensuring a given supply of wildlife relative to those of putting wildlife or its habitat to alternative and possibly incompatible uses.
> - as a guide to allocating wildlife among competing user groups, where these uses typically generate differing levels of economic activity.
> - as a guide to the revenues the Crown might obtain by charging an economic rent for the use of its resources.
> - as a guide to the compensation to which certain wildlife users might be entitled in the event of adverse impact on the abundance, quality or allocation of wildlife."
> (Usher 1983:1-2)

He outlined four ways that wildlife helps to create economic values. People value wildlife for:

1. wildlife products, e.g., meat and pelts
2. the wildlife experience, which may or may not involve the consumption of wildlife
3. the set of activities or way of life based on wildlife (the most common example is Native people). This value accrues to the producer and his/her family and community.
4. option or bequest values, i.e., future utility of wildlife for an individual or his/her descendents

Usher stated that all of these aspects must be considered when valuing wildlife (*ibid.*,2-3).

Pointing out that most wildlife use in North America is as an element of recreation, Usher reviewed the commonly used consumer surplus method, described above (Langford and Cocheba 1978). In Usher's words:

> "The prevailing view on evaluating the wildlife experience is that it is the sum of the expenditures an individual lays out toward that end, plus the additional amount he would be willing to pay in order to have the experience. The latter portion, which is said to be the difference between the value of the experience to the consumer and what he actually paid for it, is called the consumer surplus." (Usher 1983:5).

He drew attention to the assumptions that underlie the consumer surplus calculation:

> "The concept of willingness to pay (and hence of consumer surplus) cannot be separated from the institutional arrangements about property and management, however. These concepts are limited in their application to the following circumstances:
>
> a) where the resource is common (state) property, and is managed at public expense.
>
> b) where the supply of the resource is to be augmented through state management practices at public expense." (*ibid.*,6)

A variant of consumer surplus, producer surplus, was suggested to better describe aspects of the northern situation. Rather than measuring the willingness to pay, the producer's willingness to forego income is measured, in order to assess the value placed on the quality of life or way of life afforded by their occupation. This is the difference between what a producer earns as compared to the highest potential salary he/she could be earning, or the opportunity cost of labour. Usher stated that this is useful where loss of livelihood occurs, for compensation calculations (*ibid.*,6-7).

Whether to apply the consumer surplus (willingness to pay) or the producer surplus (willingness to be compensated) method depends on the property rights of the resource: if it is a property right that has been interfered with, compensation is in order; if no property right is conferred and the user merely has the right to compete for use with others, willingness to pay is the issue. Usher pointed out that these calculations differ not only theoretically, but in practice yield different results. The reason is that willingness to be compensated normally excedes willingness to pay (*ibid.*,7-8).

The proprietary interest of Native northerners with respect to wildlife is currently in debate. Usher stated:

> "The prevailing legal interpretation is that aboriginal rights with respect to wildlife are not proprietary, but consist instead of some sort of guaranteed access." (*ibid.*,14)

This situation is included in the subject of Native claims negotiations.

Usher pointed out the differential use of wildlife between Native and non-Native NWT residents, and concluded that certain values are realized primarily by one group or the other. Commodity values (commercial and subsistence), producer values (way of life based on harvesting wildlife), and option and bequest values accrue mainly to Native people, whereas consumer values (recreational value, which may include recreational hunting) are realized primarily by non-Natives (*ibid.*,20-21).

Usher reviewed the use of wildlife in the NWT and determined that the primary task of assessing its value to Native northerners, who are highly significant users, is to "devise appropriate means of estimating the values that arise from commercial and subsistence production." (*ibid.*,24). Although assessing the value of commercial production is relatively straightforward in principle (the number of people, volume, value, and costs of production must be determined), in reality the requisite data are not always available. Theoretically, subsistence production can be assessed similarly, with the calculation of a 'shadow price', based on substitution costs, to determine the value of the goods obtained. In practice, though, data does not exist on the number of people engaged in production (or the number who share the produce of the hunt), the volume of production in the NWT, or costs of production. As well, directly equivalent replacement goods are not customarily available, so 'correction factors' for deficiencies in the value of the substitutes have been proposed. One suggestion has been to account for protein differences (high protein levels in wildlife), which is theoretically possible. A calculation for the superior nutritional qualities which lead to better overall health is more problematic (*ibid.*,29). Many of these difficulties are similar to those encountered in calculating commercial values of wildlife produced in the NWT (lack of data), but Usher pointed out that both of these activities have the value of the *products* obtained as only one of a range of values. "There is also the value of hunting, fishing and trapping as activities, to those who engage in them, and the value of the way of life which is based on these activities." (*ibid.*,30). In order to get at the value of these activities to those who engage in them, producer surplus (willingness to be compensated as measured by opportunity cost) is used. However this calculation has proven to be difficult to determine adequately, due to constraints on participation in wage labour (lack of alternative employment, immobility of residence, lack of appropriate skills, lack of desire to participate in certain forms of wage employment), wage employment increases do not necessarily compensate for reduction in wildlife related activities (so there is no opportunity cost of labour), and people often combine the two forms of production rather than choosing between them. With no choice or tradeoff, there is no opportunity cost. Usher claimed that what was required to make this calculation was a much greater understanding of household economic strategies in Native communities (*ibid.*,30-31).

The remaining facet of value to be described is that of the way of life based on hunting, fishing and trapping activities. Usher stated that this is customarily omitted in economic calculations.

> "People often place an enormous value on their way of life. Economists have not devised any satisfactory way of expressing this in dollars and cents, however, nor is this fact adequately reflected in law. For example, compensation payments, where loss of livelihood based on fish and wildlife is concerned, are limited to the value of commercial production foregone, or the cost of reestablishing production elsewhere. No consideration is given to subsistence production, let alone the loss of enjoyment, amenity, or any other matter not narrowly related to commercial production." (*ibid.*,31)

In that way of life is a collective concern as well as an individual one, its loss can be reflected in various types of social disruptions. Although it is not possible to evaluate this directly, the cost of social agencies invoked to respond to social problems is an estimable economic cost. This disruption also affects networks of sharing and mutual dependence. As Usher put it,

> "In the long run, as a consequence of the shift from a self-sufficient economy to one reliant on wages and transfer payments, community solidarity tends to be replaced by new public and private institutional forms of risk avoidance or risk spreading: insurance, pensions, and various forms of state assistance. These costs can be estimated, and must be counted on the disbenefit side." (*ibid.*,33)

He summarized his position:

> "What I have tried to suggest here is that in evaluating wildlife, it is necessary to think not only about the continuing stream of economic values associated with the harvest or enjoyment of wildlife, but the social and economic costs which might be

> incurred if for some reason the supply of wildlife is suddenly and sharply diminished. These costs will be much higher in the case of a small community heavily reliant on wildlife for commercial and subsistence use, than in the case of a larger, industrial community for which wildlife is a greatly appreciated source of recreational values, but only one of many, and where, also, the practical possibilities of substitute wildlife experiences are greater." (*ibid.*,33-34)

The final category of value that Usher considered was option or bequest value. The option to hunt some or more in the future by those Native northerners who do not presently do so is seen as a real value comparable to insurance, as well as being an element in identity and status values as Native people. They are anxious as well to pass these values on to future generations. However, there is little literature on the determination of option and bequest values, though they are recognized by economists, and even less is known about measuring them cross-culturally (*ibid.*,34-35).

Usher concluded by making specific recommendations on how to arrive at the estimates of the value of wildlife to NWT Native and non-Native residents. He suggested procedures for determining recreation, production, option and bequest values, and recommended that considerable work be done, by economists, social scientists, government representatives engaged in renewable resource compensation planning and federal and local government representatives (including Hunters and Trappers Associations members), to arrive at a suitable methodology that is mutually agreeable. He also gave an estimate of the cost of arriving at this calculation.

E. Other studies

Researchers in the social services fields, specifically health and nutrition, have also considered the value of subsistence products, specifically of bush food. The results of these studies have been alluded to previously, so they will be presented here in brief only.

Fikret Berkes and Carol Farkas

Emerging from the James Bay Hydroelectric Project and, later, the James Bay and Northern Quebec Agreement, Berkes and Farkas addressed the debate on the extent of wild food use by James Bay Cree and Inuit from the perspective of nutrition and health (Berkes and

Farkas 1978:155). Data collected in support of the Native side of the argument, stating that land and animals were crucial to Native people and that their hunting way of life was viable economically and ecologically (Feit 1973), were analysed in terms of the health and nutrition of the area people.

The authors did not impute a cash value to wild foods. Rather, comparisons with "southern" food, based on nutrition (alcohol, calcium, fat, iron, phosphorus, protein, roughage, sugar, tannin, thiamine, Vitamin A, Vitamin C, nitrite) were made. They concluded:

> "Although more data are needed, northern bush food generally appears to be superior to southern foods in nutrient content. It is well known, for example, that Vitamin C content of many species of edible vegetation increases from south to north (Rodahl 1952) and, as pointed out by Schaefer (1969 and 1977), northern game is generally superior to southern commercial meats with respect to its content of protein, ascorbic acid, and iron." (Berkes and Farkas 1978:168)

Otto Schaefer

Schaefer directed his study toward the change in Canadian Inuit diet which has occurred since the mid 1950's, when a significant proportion if Inuit moved to settlements. He remarked:

> "There are few population groups in the world who have experienced such rapid changes in their way of living and in particular in their nutritional habits and nutritional status as the Inuit and Indians of the Canadian North.
>
> We observed in close temporal relation to these nutritional changes remarkable differences in growth and development, dental and general health and - perhaps of greatest general interest - the emergence of such so-called "Civilization Diseases" as obesity, gall bladder disease, diabetes, atherosclerosis and hypertension. Local variations of the prevalence of these diseases appear to reflect differences in the duration and/or intensity of the "acculturation" in diet and lifestyle." (Schaefer 1977:1)

Schaefer gave examples of the effects of dietary changes, particularly in adult Inuit. He presented data on the relative nutrient content of traditional vs. imported southern food items. He then stressed the effect that dietary change, coupled with the reduction of breast-feeding, had on Inuit infants.

Schaefer did not attempt to impute a cash value to traditional foods. His work is presented here due to its influence on researchers examining 'traditional' vs. imported diets. It is widely accepted that bush food is nutritionally superior.

F. Conclusions

A widely held opinion among researchers seeking to impute value to wildlife/subsistence production was that the method chosen to achieve this should be determined by the purpose of the valuation. A number of purposes were reviewed here:

demonstrating Native use of land and resources in land use conflict situations
1. demonstrating the viability of Native economies and the continuation of the way of life based on subsistence use of wildlife resources
2. wildlife management and protection
3. protection of a recreational resource
4. determining the health and nutritional status of Native northerners

Many of these approaches do not deal directly with subsistence production. However, they impinge on the way of life of subsistence hunting, in that government and wildlife organizations have often been at odds with Native views on the stewardship of wildlife (e.g., see Fuller 1981, Usher 1981, Calef 1981, Freeman 1985). The health and nutrition of Native northerners is often closely linked to family involvement in subsistence activities. The value studies undertaken in these fields have broader implications for Native subsistence activities.

The studies dealing directly with northern Native economies and land and resource use have been required to deliver their findings in quantitative forms in order to demonstrate their point: the amount, extent, degree, and comparative returns from bush activities. Many selected price as the most appropriate vehicle of expression of the products of these economic activities, and substitution cost was ultimately chosen as the most effective and practical way of imputing these prices. Usher (1983) and Pavich (1984) adequately evaluated the other alternative methodologies that have been utilized, and thus it is not necessary to duplicate their efforts here.

Ultimately, almost without exception, the authors qualified/criticized the imputing of a cash value to subsistence production. The problem was the intangibles, the qualitative nature of subsistence production as more than a strictly productive enterprise. Though the quantity of production was the specimen under analysis, the way of life of subsistence hunters and trappers was an unavoidable issue. Neither researchers nor Native northerners seemed entirely satisfied with the end result, yet it achieved its goal of drawing Native subsistence activities into the sphere of recognized viable ways of making a living in the modern world.

However, a dangerous element to these valuation studies was foreseen by many at the time that they were conducted, and has been expressed since then as well. It is the fear, not uncommon in many forms of research, that the methods and findings produced would be applied or extrapolated to other, inappropriate, uses. As Usher stated, it is tempting to view livelihood as synonymous with way of life. When it is the way of life that is being threatened by an incursion of industrial interests, this 'natural tendency' has alarming implications. It is no longer appropriate to consider products as a convenient shorthand for way of life. If it is the way of life that is threatened, it is the way of life that must be evaluated. That there are many elements of a way of life that cannot be quantified is a problem for researchers and those working in areas of developing compensation policies. What it may indicate is that the solutions to conflicting resource uses are not by quantitative means. Additionally, the qualities that are at stake may not be deciphered and ranked by outside researchers.

What will follow is a discussion of the issue of compensation. Present uses of the valuation of Dene subsistence activities are largely for the purpose of determining compensation for their loss or reduction, brought about by the conflicting actions of industry and government. The objective of this discussion is to introduce the subject ~~of compensation~~ and related practices, to review the political implications of compensation, and to indicate the parties involved and their positions on the issue. The theoretical underpinnings of valuing and compensation, and their position in the field of economics, will be reviewed in Chapter Five.

III. Chapter Three. Compensation - a review

Currently, the major use of research on valuing subsistence production is to determine how subsistence producers should be compensated for damage to the resources they use caused by competing users, generally industry. The issue of compensation is a highly political one and involves questions of property rights, responsibility and enforcement. The purpose of this review is not to propose compensation policies, but rather:

1. to outline the nature of compensation and related measures
2. to examine the principles underlying compensation and the implications these have for achieving the objectives of compensation
3. to review compensation policies, issues and objectives in the north, and elsewhere where applicable.

The theoretical aspects of compensation will be discussed in greater detail in the discussion of economic theory in Chapter 5. Alternative frameworks and assumptions will be found there.

A. Compensation and mitigation

In situations where two resource users are in conflict in their use of a particular set of resources, the issues of compensation and mitigation come into play. Compensation is defined as:

> "Payments of a suitable nature and value by a developer, or proponent of the development, to repair or redress those remaining or expected resource values forgone once mitigation has been implemented." (Reid 1980:181)

It is implicit in compensation that damage to a resource has already occurred or is inevitable/unavoidable due to resource development activities. Actions taken prior to development to reduce the detrimental effects are termed mitigation.

> "Mitigation: Any action taken in the planning, the design, the construction, or the operation, or other activities, of a resource development which will lessen or avoid adverse environmental or social impacts." (*ibid.*, 184)

In practice, compensation and mitigation are demanded by individuals, groups, or government departments for resource damage performed by private or public development activities. These claims generally involve governments as legislators and adjudicators, and sometimes require recourse to courts to decide disputes. The legislation governing the use of wildlife is of particular interest to subsistence users in the north. In Canada, much of the legislation protecting fish and wildlife habitat is both provincial and federal, e.g., wildlife protection in British Columbia and Alberta is specified by Wildlife Acts of the two provinces; fisheries are federally administered. Fish and wildlife are considered to be crown resources, based on their status as common-property — used or owned in common by all members of a community. However, common-property resource rights are poorly defined until ownership/usership rights are assigned by governments. These property rights are essential in determining mitigation and compensation.

> "The property right structure has an effect on the remedial action to reduce losses or seek compensation which, in turn, has some resource allocative significance. The broad objective of mitigation and compensation is to remove or reduce any external social costs by 'internalization'. That is, to make the proponent of the external diseconomies responsible for his actions by either preventing or redressing, or both, the opportunities forgone. The germane economic and political issues of mitigation and compensation revolve around this process of internalization." (*ibid.*, 36)

An example of mitigation and compensation for wildlife resource losses, albeit not involving subsistence users, is the Seven Mile Project in British Columbia. A dam was constructed on the Pend d'Oreille River in 1977. The access roads to this dam were to destroy over 700 acres of critical winter range for white-tailed deer, which would result in a 20-25% population reduction. Public hearings were held to determine which of three possible access routes would be used, and the route that was decided upon by the B.C. Water Comptroller was the one that would damage the deer range the most. The rationale for this choice was that one of the alternatives would have a greater community impact, and the other had a far greater cost of construction ($3.2 million), which was not considered to be justified by the value of the wildlife habitat destroyed. B.C. Hydro was directed to pay $1.8 million in compensation to the B.C. Ministry of Recreation and Conservation to implement a wildlife restoration program. The latter ministry appealed this award on the grounds that it failed to take into consideration other wildlife values associated with the free-flowing river habitat, it did not account for damage caused by other Columbia Treaty Dams associated with the Seven Mile Project dam, and it did not adequately examine alternate access road routes. This appeal was not upheld, and the original settlement was used by the B.C. Fish and Wildlife Branch to purchase land and management options, and to conduct research and implement a management program, based on their position that compensation should be on the basis of the replacement of the productive capacity of the same or equivalent resource values.

> "The Branch also adopts the position that the cost of exploring and assessing compensative measures, land acquisition, works, designs, construction, as well as maintenance and management should be borne by the proponent of the development causing the environmental impact." (*ibid.*, 17)

At the time of the Seven Mile Project settlement, it was unique for its consideration and mitigation of wildlife losses, and constituted a precedent for similar settlements. This 'enlightenment' was brought about largely by an awareness of the effects of the Columbia River Treaty (1961) between Canada and the United States, which considered conflicts in the use of the Columbia Rivers system limited to the loss of hydro power potential in other locations. Not considered were the loss of other resources, such as agriculture, forestry and fisheries (*ibid.*, 14-19).

The use of wildlife and fishery resources for subsistence is practiced in Canada chiefly by Native people in northern area of the provinces and in the territories. Various resource development projects have been proposed or implemented which conflict with this usage, and some compensation settlements have been reached or are being negotiated. For example, in Manitoba letters of intent between the Manitoba government and the affected Indian bands have sought to protect and enhance commercial fishing, hunting and trapping. More comprehensive policies have been formulated for more specific developments, such as the Northern Flood Agreement of 1977, which responded to dams on the Churchill and Nelson rivers. Included in this agreement were provisions for a Wildlife Planning and Advisory Board and a Registered Trapline Program which seek to provide compensation for reductions in production (*ibid.*, 23-24).

The issue of compensating for the loss or reduction of wildlife harvesting activities by Native people highlights a number of problems associated with the management of common-property resources, as well as the social costs resulting from loss of livelihood or a way of life, the onus of proof, monitoring, the issue of responsibility in general, and the role of government. These issues will be examined with particular reference to the situation of the Dene in the Northwest Territories, where the vast majority of land utilized for subsistence production is Crown land.

Property rights

In the very general sense:

> "Property rights refer to a set of economic and social relations defining the position of each individual (or group) with respect to the utilization of scarce resources (Furubotn and Pejovich, 1972)." (Reid 1980:29-30)

The defining of relations regarding scarce resources[5] has significant implications.

> "Property rights are, in effect, capacities to participate in the economic decision making process as a coercive force; they define and delineate loci and conditions of power, or participation (Samuels, 1971)." (*ibid.*, 97)

Compensation deals with questions of equity, allocative efficiency, and distribution, which are part of the larger legal system (common or statutory), and therefore the compensatory measures that are decided upon are dependent on property rights concerning a resource. Wilderness and wildlife are common-property resources, and as such tend to be over-used by comparison with those resources that are governed by the rules and regulations surrounding private property resources (*ibid.*, 99).

Compensation to Native people for loss of livelihood or way of life due to the curtailment of their productive activities on crown land has been a contentious issue. The property rights of Native people in this situation are extremely tenuous, in spite of arguments that the crown land, administered by the government, that they utilize is largely their property based on traditional, long term usage and occupancy, and unextinguished title. Resource development projects on crown land are subject to governmental policies on the use of crown resources, and it is the government that is responsible as well for compensation legislation and the protection of wildlife and the environment.

---

[5] In economics, a basic premise is that all resources are ultimately scarce, and all wants infinite. See Chapter Five for discussion of economic theory and further discussion of property rights.

> "It follows that the efficient and equitable means of distribution of benefits and costs from a resource will involve articulation of property rights between the potential gainers and losers. Pluralism of interests among participants — communities, governments, and project proponents — will, however, occur. Communities often strive for greater autonomy over resource utilization, but government is often reluctant to rescind their existing powers to another party, and private industry will continue to pursue unobstructed access [to] resources required to meet their project needs. A balanced analysis of social opportunities that goes far beyond the focus of 'large-scale' projects for economic gains (e.g. increased provincial revenues) is required. The analysis ought to include concepts of cultural and environmental compatibility, self-reliance, and self-regulatory systems for these regions or communities affected. ... It is within the means of government to mediate these interactions, as government is the owner of the resources whose use or protection is most often disputed — such as fish and wildlife. ... In order to be both equitable and efficient in resource allocation requires that both market and non-market values of all participants be recognized." (*ibid.*, 155-156)

Compensation and the determination of value

Chapter Two dealt in detail with the determination of the value of subsistence resources. Valuation of these resources for the purpose of determining compensation for their reduction has tended to focus on quantifiable, 'tangible' assets, especially those represented by cash returns, such as commercial fishing and trapping. However, social costs have also been a stated concern in some cases. Being 'intangible', there has been difficulty in determining their amount, or what would be required to compensate for their loss (an amount which could prove prohibitive enough, once 'internalized', to render a project economically unprofitable). The determination of social costs is thus critically important to the compensation process.

> "When project impact also disrupts the welfare of communities or regions — such as those whose economy and social structure revolves around subsistence living and tradition — compensative measures may have to go beyond restoration programs and the management goals of fish and wildlife agencies. The essence of a community (or regional) Social Program is to provide some degree of autonomy for the affected community enabling them to formulate and to instigate social objectives stemming from forgone social values of the community — wilderness economies, way-of-life, recreation, etc.. The broad objective is to ensure equitable means of redress for a welfare loss, and to ensure the social benefit is maximized

> from expenditures devoted to compensation measures. ... The premise is that where a composite of social values is a function of a community's welfare, the community is often in the best position to elucidate these social values, the nature of the impact, and the equitable means of restitution of lost values. The basic process entails transfer or delineation of property rights that will enable communities to participate in the socio-economic institution as a coercive force." (*ibid.*, 153)

B. Compensation for specific damages and compensation for loss of a way of life

In the previous discussion, the interests of wildlife management authorities and Native people were shown to merge on certain questions of compensation for damage to wildlife and habitat. Where the interests of the two groups differ is in the use of these resources: wildlife managers generally deal with the recreational use of wildlife, and Native wildlife users derive significant portions of their subsistence from wildlife harvesting, in addition to the social and cultural institutions that stem from hunting and gathering as a traditional way of life. Accordingly, issues that are important in the realm of compensation differ between the two approaches. When compensating for damages to a way of life, or seeking to value those elements of an economy promoting the social reproduction of a group of people, factors such as political control, property rights, and self-determination surface as important concerns, considerably more readily than in the case of wildlife management interests. It is these concerns that will be emphasized in the remainder of this compensation discussion.

Compensation for specific damages

Much of the recent attention devoted to Native concerns in the news media has been on the subject of land claims. Though these claims are very much related to the subject of compensation, there are also cases where Native groups seek compensation for the damages to resources that they utilize by conflicting users.

Whitedog and Grassy Narrows

In a much publicized protracted dispute, the Whitedog and Grassy Narrows bands in northern Ontario obtained compensation for the destruction of the harvesting activities that they traditionally pursued, by mercury pollution from the Dryden Chemicals Ltd. plant (a subsidiary of Reed Paper Ltd.). The compensation was in large part devoted to redressing the medical and social effects of the mercury pollution which had resulted in serious disabilities for many band members. In fact, in the opinion of the Chief of the Grassy Narrows band, it was these health problems that were the greater subject of the $16.5 million compensation, and not the loss of livelihood, way of life, and associated social problems which resulted from the disruptions and relocations brought about by the mercury pollution.

> "'After 16 years of negotiations, I personally believe the settlement is not enough,' said Grassy Narrows Chief Arnold Pelly. 'In looking back over the years, I realize my people have lost a lot more than just their livelihood. They lost their pride and their self-determination to be self-sufficient. ... When I look at the revenues the province of Ontario receives from natural resources such as timber, wild rice, mining exploration, commercial fishing and water supply, and the revenues of the company, I feel our settlement doesn't come close to those revenues.'" (*Edmonton Journal*, November 26, 1985)

A key issue in this settlement was the company's bid for freedom from future liability. Instead, a fund consisting of part of the award was established to deal with future claims.

Dene-Metis

In a document entitled *Recommendations on a Compensation Policy for Renewable Resource Harvesters* (DeLancey 1984), current concerns of Dene and Metis of the Northwest Territories regarding damages to hunting, fishing and trapping were expressed. In the statement of the problem, reference was made to Grassy Narrows, although a settlement had not been reached there at the time the Dene-Metis document was written.

> "Dene and Metis are well acquainted with the far-reaching pollution and environmental problems that have been experienced in the south, and have so changed the lives of other native peoples. They are wary of the potential for widespread interference with native harvesting in the Mackenzie valley due to similar causes.
>
> "At Grassy Narrows, mercury pollution forced a whole community to stop harvesting the one resource — fish — upon which their subsistence and commercial economies were based. Because there was no compensation regime already in place, and no clear definition of the extent of the peoples' right to harvest that resource, the community was left in limbo. Welfare became the compensation, and a way of life was lost.
>
> "As things stand now, a parallel situation could arise in the north — because the rights of Dene/Metis to harvest renewable resources have not been clearly defined, and because what constitutes a compensable loss has not been defined." (DeLancey 1984:2)

The report criticized the government for refusing to take responsibility for interferences in the harvesting rights of Native resource users. Government policy was that compensation policies were the responsibility of industry and, failing satisfaction there, Native people had access to the courts the same as other Canadians. This ignored the special status of aboriginal users and put the onus of fair policy development on the potential abusers — industry. As well, it was pointed out that using the courts as the main vehicle for settling disputes is costly and time-consuming, and legislation deals with specific cases and doesn't cover all development impacts or their cumulative effects.

Efforts by industry in the field of compensation policy development were seen as inadequate.

> "Compensation policies put forth by industry have varied somewhat in terms of their flexibility, but basically all exhibit the same shortcomings — they are restricted to *cash compensation to individuals* for proven damage to equipment (traps, cabins, skidoos), or proven loss of the resource harvested — based on returns from the previous year's harvest. In short, industry to date has only been willing to compensate for tangible losses." (*ibid.*, 4)

A feature of this report that is particularly significant for this study is its explicit statement of the values that are linked to compensation. Those values at risk are divided into tangible and non-tangible:

> "Tangible resources (quantifiable loss): meat, waterfowl, fish, furs, hides, wood, water, nutritional value, access to harvesting, loss of opportunity in a particular locale.
> Non-Tangible resources (non-quantifiable loss): cultural value, spiritual value, local economy, lifestyle." (*ibid.*, 4)

The compensation policies of the governments of the Northwest Territories and Canada were reviewed, as well as the claim of the Committee for Original Peoples Entitlement (the Inuvialuit of the Western Arctic), which was chosen for its applicability to the Dene-Metis case. Both governments were faulted for deficiencies in their compensation policies, although the G.N.W.T. was credited for taking initiatives in the field and has formulated a new policy since the Dene-Metis review.

Eight principles were identified as being basic to the development of a compensation policy.

1. Compensation must stem from recognition of an aboriginal right to harvest all the renewable resources of the land.
2. A compensation policy must be based on recognition that the aboriginal right to harvest is a collective right, and provision must be made for collective compensation when applicable.
3. The goal of a compensation policy must be to allow the way of life to continue, i.e. to make whatever provisions are necessary so that native harvesters can continue to harvest if they so choose.
4. A compensation policy must be flexible enough to address the needs of a variety of native harvesters.
5. The right of secondary users to compensation must be recognized, in addition ot the actual harvesters.
6. Compensation must be seen as a *last resort only*. Every possible effort must be made to avoid damage to, or interference with, renewable resources, through the attachment of strict terms and conditions for environmental protection. Dene/Metis must be involved at a regulatory level in this process.
7. The costs of compensation must be high enough to act as a deterrent, i.e. to make it in the developer's interests to take all steps to avoid a situation where compensation will be required.
8. Practical considerations: A compensation scheme should avoid the necessity of recourse to the courts; should keep administrative mechanisms as simple as possible; and should be accessible and set up to respond quickly to claims.

(*ibid.*, 15-16)

In addition to these principles, the Dene-Metis report made a number of recommendations of a generally more practical and specific nature regarding what they desire in a compensation policy.

1. Rather than attempting to attach a dollar value to resources whose value cannot be quantified, the compensation policy should whenever possible provide for alternative ways to make those resources available.
2. The compensation policy must be flexible enough to address different categories of loss; and to provide a range of types of compensation suited to each specific situation.
3. The costs associated with permanent damage to, or loss of, a renewable resource must be high enough to act as a deterrent to developers.
4. Compensable losses should include damage to or interference with *all* renewable resources traditionally harvested or used by Dene/Metis; as well as interference with access to harvesting areas.
5. All Dene/Metis claimants are eligible for compensation. Compensation claims may be made either by individuals or by collective groups — families, communities, or regions.
6. The burden of proof should be on the developer, and not on the claimants.
7. A compensation fund should be established, into which all developers operating on Dene/Metis lands must pay on a pro-rated basis.
8. The Wildlife Management Board proposed in the Dene/Metis position on wildlife should act as the arbitration body for the compensation policy.
9. Dene/Metis Local and Regional Wildlife Management Committees be used to assess the validity of compensation claims.

10. Compensation should last as long as the interference or damage exists.
11. Compensation claims must be reviewed, decided and compensation administered speedily, to make the system accessible and responsive to resource users.
12. The compensation policy should allow for retroactive claims.

(*ibid.*, 22)

A compensation policy is visualized as part of a system of development regulation and environmental protection. The Dene-Metis see Native people as authorities in environmental matters and want this expertise to be recognized. Dene-Metis experts should be included in positions of authority in setting environmental standards, impact assessments, monitoring, and surveillance of all developments on lands traditionally used by the Dene-Metis. As well, they desire that research be undertaken to expand the data base on Dene-Metis harvesting activities, contemporary and traditional resource use, and other relevant research (*ibid.*, 23-24).

The Dene-Metis compensation report deals in practical detail with the effects of industrial activity on the current economy of Native communities in the NWT. This concern stems from the real and immediate threat of major conflicts with industrial resource users. As such, the recommendations are not restricted to single-issue compensation, but also deal with compensation for and preservation of a way of life.

Compensation for loss of a way of life

In the discussion of valuing, the difficulty of valuing a way of life, or even of subsistence production activities, was described. The problem was that the myriad of intangible values involved could not be adequately described in market terms; in other words, they resisted quantification and assignment of a cash-equivalent value. However, it was argued that subsistence activities could be described qualitatively with the involvement of the participants in outlining valued aspects, and following an analysis of the mode of production that did not concentrate on individual consumer decisions, but instead focussed on the social reproduction of the society.

It has been stated repeatedly that it is not possible to compensate for the loss of a way of life. It is difficult to disagree with this opinion, particularly given the nature of most compensation measures (cash, transfer payments, social programs operated and controlled by government agencies, etc.). However attempts to achieve fair compensation that would enable the claimants to continue their way of life and protect and enhance their society could stand greater chances of success if they followed from an in-depth analysis of the values, both tangible and intangible, and their interrelationships, that were forgone.

In the event that 'non-quantifiable' losses come to be deemed compensible, the question remains: how exactly can the loss of a way of life be redressed? In the context of the mainstream Canadian economy, this stumbling block is seldom given attention — businesses can be relocated, workers can seek other employment, relocate or retrain, property may be replaced with similar property, and most lost values may be replaced in some manner (at least in theory). This does not imply that hardships do not occur and inequities exist, but that compensation in most cases is a matter of degree of redress rather than of kind. Loss of way of life becomes an issue when the particular life way involves the cooperation of a family and certain social organization, such as in the case of family farms, fishing communities, and Native groups in the north. The difficulty arises because much more requires compensation than the loss of livelihood: self-motivation, independence, cooperation, tradition, and society are generally highly valued. This has been expressed by the reluctance of fishing communities to abandon their way of life in the face of considerable poverty and arduous working conditions, and a similar resistance of farmers to give up the family farm, however 'uneconomic' (Clement 1983:225-243). Due to the position of these sorts of occupations within the Canadian economy, different values from a sole emphasis on maximizing income, material acquisition, and job benefits (major concerns of most wage earners) are expressed. Still greater differences in values may exist when a group has a different cultural and economic background than that of market capitalism, as in the case of Native northerners.

To illustrate the practical side of compensation for a way of life, two documents expressing intentions, promise, and concrete plans for a just solution, dealing specifically with the Northwest Territories, will be examined. An indication of the sorts of problems that have occurred in these and other instances of compensation claims, as well as inherent problem sources, will be briefly reviewed. The objectives are to provide an idea of the difficulty of dealing with the complex and largely intangible factors comprising a way of life in the current compensation framework, and the problems of planning and implementing workable solutions. Further discussion of the more theoretical elements of compensation, and a more extensive criticism will be found in Chapter Five and the Conclusions.

In All Fairness

In the Federal Government's statement of a Native Claims Policy (Canada 1981), three major objectives were stated initially:

> "1. To respond to the call for recognition of Native land rights by negotiating fair and equitable settlements;
> 2. to ensure that settlement of these claims will allow Native people to live in the way they wish;
> 3. That the terms of settlement of these claims will respect the rights of all other people." (Canada 1981:7)

The intentions of government regarding what will be achieved by settling claims was also specified:

> "By negotiating comprehensive land claims settlements with Native people, the government intends that all aspects of aboriginal land rights are addressed on a local and regional basis. These aspects run the gamut of hunting, fishing and trapping, which are as much cultural as economic activities, to those more personal and communal ways of expression such as arts, crafts, language and customs. They also include provisions for meaningful participation in contemporary society and economic development on Native lands." (*ibid.*, 7)

These objectives and intentions directly address some of the problems of Native people, and could be considered very positive statements. However, the "Basic Guidelines" within which these objectives are to be realized begin to propose significant constraints or even impediments.

> "When a land claim is accepted for negotiation, the government requires that the negotiation process and settlement formula be thorough so that the claim cannot arise again in the future. In other words, any land claims settlement will be final. The negotiations are designed to deal with non-political land rights such as, lands, cash compensation, wildlife rights, and may include self-government on a local basis." (*ibid.*, 19)

In fact, it is this stance on finality that is viewed by many as being a major stumbling block in negotiations and in achieving the stated objectives.

> "Finality contradicts what northern native peoples understand the negotiation of claims to be all about and what they have been promised in some of the more exhortative language in *In All Fairness*. Native peoples regard the claims process as a way of defining the political, social, economic, and cultural role they are to play in the Canadian federation. It is not uncommon to hear native leaders describe claims negotiation as a process through which their peoples will 'join Canada'. They expect significantly increased control over northern land and resources through the claims process and do not understand how they can be expected to surrender existing rights over a far-flung region for the same rights over a smaller region." (CARC 1985:4)

The benefits to a successful claimant are categorized into lands, wildlife, subsurface rights and monetary compensation. On the subject of the specific land rights that may be exchanged for the unextinguished rights through the claims process, certain restrictions are placed on the land to be granted:

> "Lands selected by Natives for their continuing use should be traditional land that they currently use and occupy; but persons of non-Native origin who have acquired for various purposes, rights in the land in the area claimed, are equally deserving of consideration. Their rights and interests must be dealt with equitably.
>
> Other basic access rights must be taken into consideration: rights of access such as transportation routes within and through a settlement area; rights of way for necessary government purposes; rights of access to holders of subsurface rights for exploration, development and production of resources, subject to fair compensation as mutually agreed either through negotiations or arbitration.
>
> Similarly, special protection must be ensured against unlimited expropriation powers in the case of lands granted in settlement. Meaningful and influential Native involvement in land management and planning decisions on Crown lands could be initiated and strengthened by providing membership on those appropriate boards and committees whose decisions affect the lives of their communities." (Canada 1981:23)

In the area of wildlife, exclusive Native harvesting rights will be permitted only on lands leased in fee simple, with *possible* preferential rights on Crown lands. However, on *all* lands:

> "Generally, the settlement may provide for prescribed preferential rights to wildlife on Crown lands. Exclusive rights would be limited to fee simple or the equivalent Native lands or to specified species elsewhere. All areas, whether they include those for exclusive Native use or shared by the general public will continue to be subject to the existing general laws as they apply to hunting, fishing and trapping; they will be further subject to present and future sound conservation policies and public safety measures." (*ibid.*, 24)

The extent of Native participation in developing the policies, measures and sound conservation policies, is described as "making recommendations" and "providing advice":

> "In addition to dealing with the protection of their rights to hunt, fish and trap, the settlement should provide for the involvement of Native people in a much wider spectrum of activities affecting the whole area of wildlife. This could include, for example, fuller participation in wildlife management, such as making recommendations to the government on the establishment and maintenance of wildlife quotas or providing advice on the formulation of management policies and other related matters." (*ibid.*, 24)

Regarding subsurface rights, the government on the one hand states that these are to act as "an incentive for Native people to participate in resource development", and then suggests that these rights be granted in areas where there is a strong disincentive to pursue development.

> "The federal government is prepared to include subsurface rights in comprehensive land claim settlements in certain cases. The motive for granting such rights is to provide Native people with the opportunity and the incentive to participate in resource development. Granting subsurface rights close to communities and in critical wildlife habitat areas would be a protective measure designed to eliminate any possibility of granting resource development rights to any prospective developer in conflict with the wishes of a local community." (*ibid.*, 24)

Monetary compensation is to be a specific and finite amount. In this case, no statement is made regarding the objectives or rationale for cash transfers of this sort (*ibid.*, 24).

Renewable Resource Compensation Policy

In a similar vein as the Federal Government's Native Claims Policy, the Government of the Northwest Territories (G.N.W.T.) developed a policy to deal with compensating renewable resource harvesters for damage to their activities caused by development (Northwest Territories 1984). The basic principles of the policy are:

> 1. Persons who are dependent upon or gain livelihood from the renewable resource base, or who share in, or are directly dependent on the products of the harvest require protection against the effects of resource development on their property, on the renewable resources, and on their ability to harvest renewable resources.
> 2. Costs associated with the loss of renewable resources will be taken into account in the overall planning, design and approval of resource development projects.
> 3. The resource developer is responsible for payment of costs associated with those impacts which result from development activity.
> 4. Prevention and mitigation of impacts of the renewable resource base and economy to the degree possible are the first priority in managing the effects of development. Mitigation is prerequisite to considering any compensation arrangements.
>
> (Northwest Territories 1984:1)

The thrust of the Compensation Policy is that developers are required to submit a Compensation Plan, and negotiate a Compensation Agreement with the harvesters who may be affected by the development activities, as part of the requirements necessary to acquire governmental approval for a development. The Compensation Agreement is between the harvesters and the developer; government's input is to provide an outline for an agreement:

> "(i) The onus to develop a compensation agreement rests with the resource developer and the resource harvester(s).
> (ii) The Government of the Northwest Territories will provide an outline for compensation agreements as a basis for company/harvester negotiations, and will make a facilitator/observer available to assist meetings, if requested." (*ibid.*, 3)

The Compensation Agreement is to include details of:

> "(i) The areas used for renewable resource harvesting, the estimated catch and values of the harvest (G.N.W.T. and the harvesters will assist in providing this information).
> (ii) Impacts which will be compensated.
> (iii) Acceptable forms of compensation.
> (iv) Contact points for representatives of the developer and resource harvesters." (*ibid.*, 3-4)

From this document, it is not clear what sort of guidelines may be provided by the G.N.W.T. or the manner in which its initial principles are to be realized, or the negotiating power and flexibility that the Native harvesters have in developing Compensation Agreements.

Eligiblity for compensation is limited to primary resource users and their dependents, although communities and companies are included in the definition of 'renewable resource harvesters'. Secondary users, such as canneries and craft stores, are excluded, with the exception of those crafts or products produced by the harvesters or their dependents (*ibid.*, 3).

The forms of compensation specified by the Policy and Directive are quantitative, specific, and final. Compensation is initially defined as:

> "Compensation. Means the payments (in cash or kind) provided by the developer (or party responsible for damage to the renewable resource base) to redress or offset the losses of capital goods or livelihood which occur despite mitigation efforts." (*ibid.*, 1)

Although payment in kind is indicated as a possibility at the outset, the policy further mentions determining the value of the harvest (presumably monetary value), and assessment of the developer's financial capability and method of payment, which indicate a monetary payment or similar form of compensation.

The initiation of a claim and the onus of proof rest with the harvesters. Certain conditions are set up for harvesters to follow in making claims.

> "(a) It is the responsibility of the claimant to initiate a claim for damages or losses directly with the responsible developer. Claims must be reported or submitted within one month of the damage being noticed (radio or telephone reporting will be acceptable until the harvester returns to the community).
> (b) Department of Renewable Resources' field officers will assist harvesters in completing compensation claims if requested by either party, or if the party responsible for damages cannot be identified.
> (c) Those claims that cannot be settled directly between the claimant and the developer shall be referred to the Minister of Renewable Resources who may then refer them to the Compensation Review Board.
> (d) If required, supporting evidence will be gathered by the Wildlife Officer and/or company representative, with the harvester.
> (e) Payment will represent full and final settlement of the claim.
> (f) Where a claim for loss establishes the loss is due to development but that it cannot be attributed to any one developer, then all developers in that area may be required to jointly share reimbursement costs. Pro-rating according to the level of activity may apply." (*ibid.*, 5)

As in the case of the Federal Government's comprehensive claims policy, the G.N.W.T. document specifies finality (item (e)). It is assumed that a one-time payment will be sufficient to redress any damages to harvesting activities or to the environmental resources sustaining them.[6]

In the event that a claim cannot be settled between the harvesters and developers, the government is authorized to refer it to a Renewable Resources Compensation Review Board. Three members are appointed by the Minister for Renewable Resources: one nominated by the private industry sector, one from the N.W.T. Hunters and Trappers Federation, and one from the general public within the N.W.T.. In some cases, two additional members from the region of the claim may be appointed to provide additional local information. Board decisions are final. Costs of claims investigations and Board activities are borne by the G.N.W.T..

This compensation policy should be judged in the context of other government policies (such as those governing the environment and resource development, etc.), as well as the political reality of the influence that Native harvesters might have in negotiating compensation agreements with industry, in order to properly gauge the effectiveness of the policy. However, some general comments apply to policies of this type.

---

[6] See Chapter Five and Conclusions for further discussion of finality as it applies to compensation claims.

Firstly, compensation involving monetary or other payments of this kind are generally inadequate to redress the loss of livelihood, and fall far short of the ability to protect a way of life (a stated basic principle).[7] Briefly, the ability to engage in productive activities, particularly of the highly self-motivated and socially interrelated nature of Native renewable resource harvesting, brings into play a myriad of values, tangible and intangible, not represented by the value of the renewable resource income or equipment expenditures. Social disruptions associated with the loss of the ability to pursue a livelihood as a resource harvester (or related activities), or to engage in independent decision making regarding the course of production activities, are also not accounted for in calculations of replacement values. The significance of renewable resource harvesting to a local economy or to individuals who are not direct dependents of harvesters but who benefit from these activities (e.g., elders who may regularly receive meat) is also not considered.

Secondly, specific details of policies of this sort place considerable pressure on harvesters and on their ability to pursue their way of life. Negotiation of compensation agreements with *each* developer that may operate in a region, the onus of assigning a value to the resources in an area for the purposes of the compensation agreement, acquiring the data to support the claim, participating in the claim process, and instigation of the claim within the prescribed time limits are activities not exactly compatible with hunting, fishing, and trapping.

Thirdly, compensation policies can be viewed as essentially a 'license to pollute' by Native harvesting interests. Although this policy specifies that mitigative measures are a primary first requirement and a condition of approving development proposals, in order to adequately protect the way of life of Native northerners, the ability to influence the course and very existence of development on lands important to them is necessary.

---

[7] This issue was also addressed in the discussion on imputing value in Chapter Two.

Lastly, the principle of finality — one-time compensation for damage to renewable resource harvesting activities — is inadequate. The nature of renewable resources themselves predicates that real redress for damages will need to be ongoing, and difficult to predict and evaluate at the outset. The additional social factors of productive activities or a way of life based on renewable resources complicates the matter considerably. The effects of one-time payments are known to renewable resource harvesters:

> "The most successful claimant in such a situation was Wayne Lennie in Fort Norman, who suffered the loss of a healthy lynx harvest due to seismic activities. With the assistance of legal counsel provided by the Metis Association, Lennie was able to negotiate compensation for approximately half the amount of his original claim. However, as MANWT Vice-President Harold Cook pointed out afterwards, this one-time pay-off will do nothing for Wayne Lennie or any other trapper who might have chosen to trap in the area in future years, while impacts are still being felt." (DeLancey 1984:14)

Conclusions

This discussion has provided a brief introduction to the issue of compensation as it applies to renewable resource harvesting by Native people in the north. What will follow from this discussion is a description of subsistence activities conducted by a Dene family in the spring and summer of 1984. The objective of this description is to provide an idea of the way of life and associated values of spring hunt and summer fish camp. Then, a theoretical framework for describing the integrated nature of these activities — their social and economic aspects — and how these relate to the issues of valuing and compensation, will be posited in Chapter Five.

IV. Chapter Four. Dene subsistence activities and their values.

A. A brief description of subsistence production activities

The previous discussion has centred upon the options that have been exercised in valuing bush production and in compensating for its loss or damage. What will now be discussed is the nature of this economy, focussing on particulars recorded from May to September, 1984, in the vicinity of the community of Fort Good Hope, Northwest Territories, Canada (see map, Figure 1). Following the description of activities will be a brief summary of aspects of these activities which were indicated to be valued, for various reasons, by the participants.

Dene people of Fort Good Hope formally divide their annual subsistence activities into categories according to season, the wildlife that is available or desireable, and the type of activity that is undertaken. Beginning in late April to early May, spring hunt focusses on the spring hunting season for beaver and muskrats and birds, as well as such large game as may be present and pursuable given the travel constraints imposed by spring break up of the Mackenzie River and its tributaries. Summer fish camp follows spring hunt, after an indeterminate period, coinciding with the presence of large numbers of a variety of species of fish in the Mackenzie River. Production activities have a visible focus in the fish camps along the river, however less apparent but perhaps equally significant hunting occurs away from the river at lakes, mountains, and smaller tributary rivers where big game (moose and sheep) are to be found at this time of the year. Toward the end of summer, signs of caribou returning were also observed. Following fish camp, often with very little lag, is fall hunting and trapping. This activity, beginning in September and continuing until Christmas, involves considerable travel for many families, chartering aircraft such as Twin Otters to lakes 50 to over 150 air miles from Fort Good Hope. Major activities pursued are trapping of luxury furs (mink, marten, weasel, lynx, wolverine, wolf, white and coloured fox) hunting of big game (moose, caribou, and bear), and

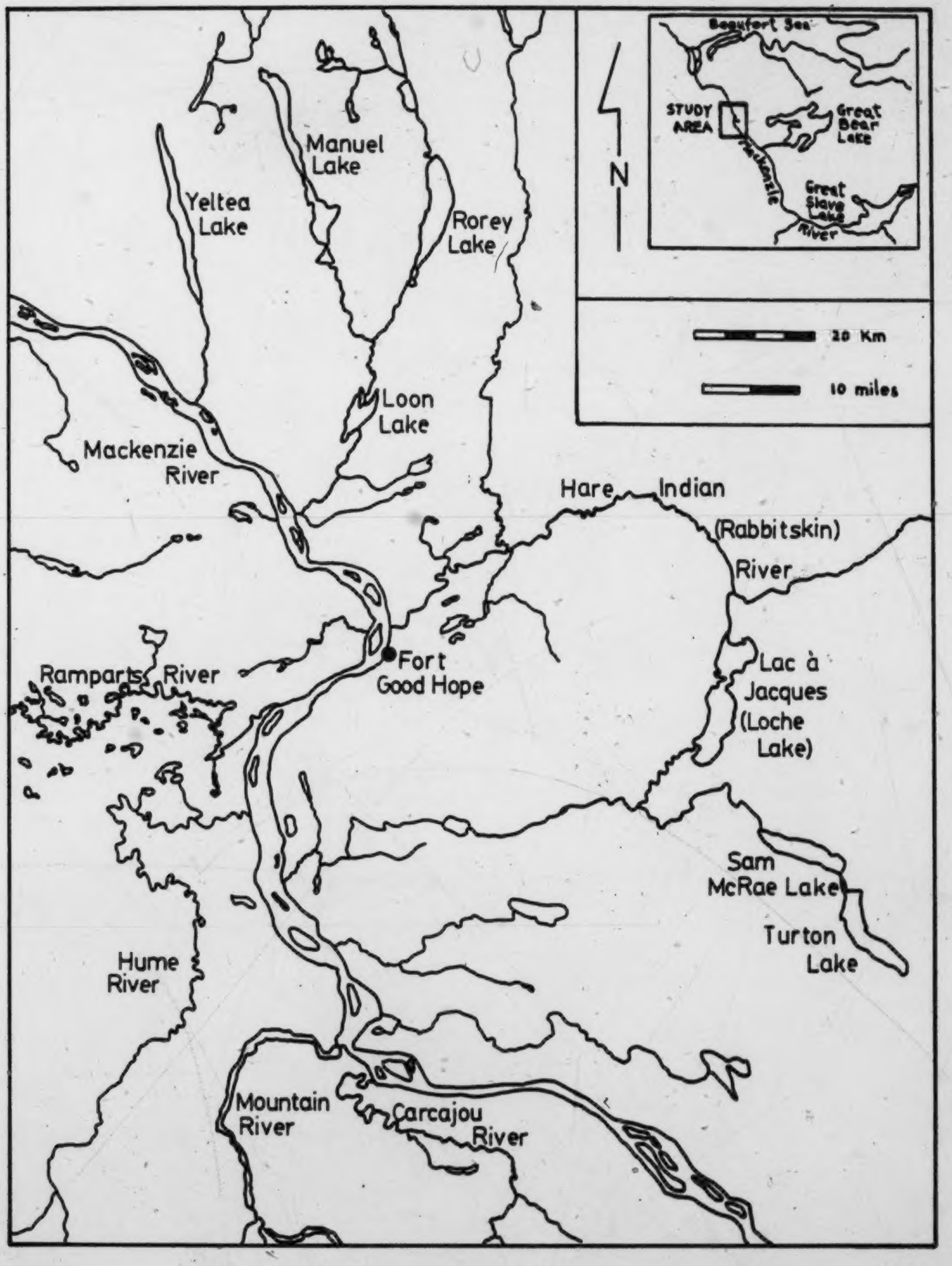
Beaufort Sea
STUDY AREA
Great Bear Lake
Mackenzie
Great Slave Lake
River
N
20 Km
10 miles
Manuel Lake
Yeltea Lake
Rorey Lake
Loon Lake
Mackenzie River
Hare Indian (Rabbitskin) River
Fort Good Hope
Ramparts River
Lac à Jacques (Loche Lake)
Sam McRae Lake
Turton Lake
Hume River
Mountain River
Carcajou River

Figure 1. Map of the Fort Good Hope area of the Northwest Territories.

fishing. After Christmas, people may return to their fall camps to continue trapping and hunting, returning to the settlement for Easter and preparations for spring hunt.

Coincidental with bush oriented activities are other cyclical or quasicyclical activities: the school year, religious events and holidays, wage labour and other cash income sources, and seasonal transportation availability (e.g., Northern Transportation Company, Ltd. barges run on the Mackenzie following breakup until late September, bringing in bulk items such as furniture, machinery, food, and building materials. The appearance of some of these goods conditions other activities, in that personal construction projects and construction-oriented employment occur during the summer when supplies are available). The timing of much of the wage labour is seasonal, construction occurring more in the summer, oil drilling in the winter when the ground and rivers are frozen. The school year (September through June) coincides with the bush activities having the greatest amount of participation -- fall and winter trapping and spring hunt. The net effect of the timing of these non-bush activities is that they present resources that fluctuate temporally and in quantity, and are of variable importance to individuals depending on such factors as age, family structure, and where they derive the majority of their income. Individuals and families may thus make different decisions regarding which activities to pursue (not all are mutually exclusive), and these decisions may vary from year to year. However, essentially every Dene family participated to some extent in both subsistence and cash sectors of the economy, if only as the occasional recipient of bush products, or, on the cash side, of social assistance in some form.

To address the question of the value of bush products, the production, processing, use, and some distribution of products was observed for spring hunt and summer fish camp. What will be described is the nature of these production activities, the personnel involved, products acquired, processing, use, some idea of time allotment, cash expenditures and earnings, and, where possible, a sense of available alternatives. The object of this description is not to provide an exhaustive picture of Dene bush life, but rather to isolate those elements which may involve variables significant to valuing bush products.

Spring hunt

Beginning in early May, the group of people that I accompanied travelled by snowmobile to a location 20 miles north of Fort Good Hope, at the confluence of the Mackenzie and Loon Rivers (see Figure 1 for locations mentioned in the text). Prior to the actual move to bush camp, numerous trips were made to move out supplies and set up tents. Personnel consisted of a woman and her three sons, and the families of two of them (one being unmarried), in all 9 adults including myself, and 7 children and adolescents in 3 households.

Spring hunt had a number of foci. In a productive sense, there were two major objects: the spring hunting of beaver and rats in open water along river banks for furs and meat, and the hunting of birds at various points along the Mackenzie River on their way north. However, spring hunt is also considered a very special activity in a social and personal sense. It is valued as a time when people get together to enjoy the coming of warm weather, new company, a change in diet, and a different location. Spring hunt activities are considered exciting, enjoyable, and something that is good for families to do together, or even for children to be sent on with relatives. This is in contrast with fall hunting and trapping, for example, which is also considered enjoyable, but is busier and has as an important focus the production of furs for cash.

During the course of spring hunt, which terminated for this group on June 18, a large number of animal and plant species were utilized. The focus varied between birds, fish, beaver, muskrats and game (caribou, in this case), depending on availability and ease of travel.

Generally, production activities were of an ongoing nature and spread over the course of the day (24 hours of sunlight enabled many activities to occur at "night"). All members of the group with the exception of the infant took part in the acquisition of bush products if only as observers or students. The pace of daily activities revolved around visiting fish nets and hooks set for loche[1] twice daily, rabbit snares every day or every second day, depending on productivity, and processing activities such as hide working, making dry meat, flensing beaver and bear skins, stretching muskrat pelts, butchering, and cooking. Then, at irregular intervals depending on weather, ice conditions, personnel available, and need, groups would engage in hunting activities ranging from overnight or multiple day trips to distant lakes or islands, to short walks with small children to the nearby Loon River to sit for birds or beavers. These hunting trips were mainly, though not entirely, undertaken by the men and older boys. Women and children would make regular trips to the bush for plant products such as brush and berries and to check snares. As a general rule, men tended to perform activities requiring mechanized transport or tools (boats with motors, snowmobiles, chainsaws, and guns), whereas women travelled on foot or with a man as driver and used mainly hand tools.

---

[1] Loche are also known as burbot or ling cod.

The personnel involved in production consisted of all adult and adolescent camp members as producers, and children as observers/students, babysitters and producers of small items such as branches and birch bark. The senior adult was the mother of the three adult men and the central figure in camp, being influential in most major decisions regarding camp business and a source of expert information on bush matters. She spent most of her production time engaged in tasks requiring highly skilled labour, such as hide working, making dry meat, collecting certain kinds of rotten wood and branches, and setting snares, though her role was more analagous to a manager than a skilled labourer. She also performed many of the less skilled physically demanding tasks such as hauling ice for drinking water and hauling firewood. The other adult women in camp, two daughters-in-law and one of their sisters, performed both skilled and unskilled labour, though they were not as skilled in some tasks and did not have the same sort of input in decisions involving the entire group. It is considered ideal to have two adult women per household, one to perform skilled tasks and the other to handle daily household chores and assist with child rearing duties.

Men's productive tasks included regular, frequent activities such as tending nets and snares and hauling firewood, to more opportunistic hunting expeditions. Participation depended on availability of equipment and ammunition, the needs of the participant and family, the personnel on hand, and practicalities of transportation. Hunting expeditions involved from one adult male and his 7 year old son on a short day trip to all adult males in camp (three) plus visitors (five men), a 7 year old, and myself on a portaging hunting trip. Hunting was also conducted in the course of other activities, such as travel to town or expeditions for wood, and thus included as participants whoever happened to be along.

Products that were acquired varied in the amount of processing time required to render them useable as compared to time spent in their procurement. Fish, for example, were edible with very little processing, whereas birds and dry meat required greater time input. The greatest amount of processing of any single item was smoke-tanned hides, where processing time far outstripped procurement time.

Products were thoroughly utilized, especially by Euro-Canadian standards. Entire large animals were eaten or utilized, with the exception of the lungs and contents of the digestive tract. Brains of caribou and moose were used in hide tanning. Hides were saved for tanning when they were in good condition. In the spring, bird down was saved for blankets. Heads of birds, fish, and mammals were routinely eaten. The exceptions to this general rule were muskrats, with only the fat ones being eaten, and bear, which no members of this group were fond of (it was said to be too rich). All meat was either used immediately, hung to dry in the smoke tipi, made into dry meat, or given away. Plant products were collected as needed, with special trips being made to gather branches for flooring (good quality branches were not available in the immediate vicinity of camp), dry rotten wood for hide smoking, and berry picking. These activities were undertaken by women, whereas men generally gathered firewood (by skidoo) and poles for tipis (by boat) as well as any building materials that might be required.

Participation in spring hunt required considerable cash outlay for equipment and supplies. Each family brought at least one snowmobile and sleigh with them and fifty to sixty gallons of gasoline. Chainsaws, guns, aluminum boats, and outboard motors were the other major equipment items (only two of the families had chainsaws; only one had a boat and motor). These tools were also used in town and in other bush activities, so their expense was not solely for the purpose of engaging in spring hunt. However, in order to go to the bush, it was necessary to have transportation. Additional minor items, such as bush radios, portable radios, tape recorders, and a portable hand-crank sewing machine were in camp. Tents, stoves and tarps required for shelter and work areas. Small household items (dishes, cutlery, axes, files, rope, twine, snare wire, hand tools, etc.) and clothing, which wore out quickly in the course of camp activities, accounted for much of the remainder of equipment.

Food items purchased at the Hudson's Bay Company.[9] Each family took staples of tea, flour, lard, sugar, coffee, canned fruit, canned vegetables, potatoes, onions, paper products, laundry supplies, oatmeal, jam, macaroni, rice, slab bacon, soup mixes, canned meat, butter, powdered milk, and candy and treats ostensibly for the children. Many of these items were used in conjunction with bush food in soups and stews, or to make bannock or porridge to accompany meat. Some food was used as a convenience when travelling, hunting, or as a snack (canned meat, canned fruit, bannock, candy). However, in bush camp, *every* meal was based on meat and fish acquired in the bush. Though this did not represent a cash input, it reduced considerably the cash expended for food, as well as making available quality food and animal by-products that were not otherwise accessible.

Cash generated was through the sale of animal furs -- beaver, muskrat, and bear. Beaver prices were down to a rumored $25.00 per pelt, and were thus not pursued in great numbers. Muskrats were fetching $2.50 to $3.50, which was considered a good price, in that they require much less labour input to stretch and clean than beaver, and were thus of interest. Bear skins did not sell well in the raw state: people were expecting $200 for a good one, flensed, stretched, and dried, suitable for a rug. Mounted they were worth considerably more, however this involved considerable cash outlay for taxidermy work in order to net a greater profit, and most people did not consider the investment to be possible or practical. Six bears were shot in the vicinity of the spring hunt camp -- bears were not actively pursued but were shot if they came around camp. Garbage was collected and burned 1/4 mile from camp to discourage intimate visits from bears, and dogs were kept as alarm mechanisms and to eat scraps (these dogs were also used for transportation during winter trapping).

---

[9] The Hudson's Bay Company was the only source of most retail goods in town. A small canteen sold candy and soft drinks, and the local cooking class had frequent bake sales at the band office as well.

Profitable alternatives to engaging in spring hunt activities were not considerable. Very little wage labour was available in town or elsewhere -- spring is customarily a time of cash shortages. Summer construction projects and related cooking jobs did not begin until after breakup, when the supply barges began running. Guiding at fishing lodges, another cash labour source, began in summer as well. Oil industry jobs took place either in summer or on frozen ground and rivers in the winter. Though school was still in until the end of June, spring hunt was considered to be a valuable educational alternative, and a number of children went to bush camp instead of to school.

Alternatives existed in the location of bush camps. Many camp members were accustomed to going upriver and up a tributary of the Mackenzie to an area of meandering rivers and small lakes which was good beaver habitat. Due to the low price for beaver in 1984, it was decided to concentrate on birds at the Loon River location, proximate to staging areas.

In summary, then, spring hunt required considerable cash inputs, though resources derived from these activities were mainly in the form of goods and food rather than cash. Still, it was considered an important and enjoyable activity. Ten groups such as the one described here went out on spring hunt from Fort Good Hope, and much communication between these groups and others from Colville Lake on band radios indicated that all were participating in similar activities.

Summer fish camp

Fishing on the Mackenzie River in the summer of 1984 was hampered by changing water levels. Considerable rain during the month of July caused the river to rise and fall and rise again, bringing with it sticks and logs which carried away nets. Numerous nets were reported to be lost to wolves, who apparently dragged them out of the water and ate the fish in them, unfortunately destroying the nets in the process. The inclement weather and the two weddings that took place in the summer delayed the departure of a number of groups to fish camp.

Fish camp is an activity that seems to have declined in participation in the last decade or so. Informants recalled numerous locations in the vicinity of town where people camped and fished, and said that at one time "everyone used to go to fish camp". Currently, it is mainly the elderly people who set up fish camps, though they are often accompanied by unemployed younger adults and children. One full time employed man and his family camped across the Mackenzie River from town and commuted to work every day, and others set nets from town. Also, the local Hunters and Trappers Association had a camp set up in the Little Chicago area, about 80 river miles north of town, which was funded to train young people in bush skills. Various families and individuals were employed and camped at this location. Reasons given for the general decline in participation in fish camps were that great quantities of fish for dog food were no longer required due to replacement of many dogs by snowmobiles, and that summer jobs are available and desired to supply cash for fall trapping.

The group of people that I accompanied to fish camp was a much reduced version of the spring hunt personnel; the elderly woman, an unmarried son, and her seven year old granddaughter. However, there was seldom a day without visitors, and a family consisting of a couple, their six children and another adolescent camped in the vicinity for one week. One widowed daughter of the principal woman also joined the camp for over a week.

As in spring hunt, the fish camp was partially set up prior to the actual move out, on August 17. Camp was established on the shore of the Mackenzie River on the west bank adjacent to "Airport Creek", approximately 20 miles north of Fort Good Hope (directly across the river from the spring hunt location at Loon River)(see Map 1). This location was chosen for its access to drinking water[10], proximity to fish netting sites, closeness to the river for breeze and relief from mosquitos and black flies. As well, this location was about one hour from Fort Good Hope by boat, which was considered far enough to be out of the influence of town, but close enough to make numerous trips to town when necessary. The site was also very clean and free of brush, being low on the beach where annual flooding and ice scouring keep it clear of vegetation and abundant in driftwood.

---

[10] Water from the Mackenzie River was not used as drinking water, due to its silt load and other possible impurities. Instead, clean water was obtained from tributary

Production activities at fish camp differed somewhat from spring hunt. The definite emphasis, not suprisingly, was fish. Two nets were set, one directly in front of camp and another in an eddy approximately 1/2 mile upstream. These were visited twice daily, and some of the fish procured were then processed into dryfish. Snares for rabbits were set on top of the cliffs behind camp and on an island slightly downstream. Hooks for loche were set in front of camp. Waterfowl were not on the river in numbers during the early part of the summer, but toward later summer (late August to early September) they began to return to feeding and congregating points along the river on their southerly migration. Thus, though they were obtained periodically and in small numbers, birds did not make up as significant a part of the fish camp diet as they did of spring diet. Beaver and rats were not hunted during summer fish camp either; whether this was due to inavailability or poor pelts at this time of year (or both), I am not certain. Moose frequent lakes and small rivers away from the Mackenzie River in summer, and a number of successful trips were organized to hunt them. Late summer trips to lakes for moose included hunting for birds as well. Caribou tracks were noted in the area in late August, and a hunting trip was planned that didn't occur due to lack of time. Cash production was limited to two bales of dryfish, sold to an employed relative for $60.00 each, and one wolf hide for potential sale to a southern man in town.

Processing activities conducted at fish camp had two foci: the two or more hours spent daily in cutting and hanging dryfish, and moose hide tanning, both performed or directed by the elderly woman. Periodic processing activities following the hunting of a wolf or moose were mainly undertaken by the hunters, though subsequent preparation of moose dry meat was done

---

[10](cont'd) rivers and creeks, and from snow and clean ice on the river in the spring.

by the elderly woman. Birds, when available, were plucked, singed, and cut for fairly immediate use by whoever happened to be available for the job. Some sewing was undertaken in preparation for fall hunting.

In that the time spent at fish camp was about half that of spring hunt, costs incurred were considerably less as well. Snowmobiles were used only occasionally; travel and fuel costs were mainly for boat and motor travel (this camp travelled in a borrowed boat, though the motor was owned by a camp member). If anything, a greater proportion of the diet was in the form of bush products, as compared with spring hunt, due to the preponderance of people with traditional food preferences and the shortage of children. As well, cash was in short supply at this time of year, and activities were planned with fall trapping in mind. Most of the dry fish produced was for fall hunting and trapping camp, either for human consumption or as bait for traps. Hides were given final smoking in order that mukluks, moccasins, and other goods could be prepared for fall and winter use.

The major alternative activity at this time of year was wage labour, either at jobs such as construction sites in town, in Norman Wells, or at petroleum-related camps in the Fort Good Hope area and off-shore rigs in the Beaufort Sea. These jobs were mainly taken by the men, though some of the younger women considered outdoor manual labour to be preferred due to the high wages paid for this type of work. Women also had jobs as cooks for construction crews and in the laundry in Norman Wells. Much of the work was in rotational shifts, such as two weeks on and two weeks off, so visits to bush camps or participation in bush activities was not precluded. Social factors also constituted an alternative to bush life in the summer of 1984. Two weddings in a month, bingos and card games, and the visits of various outsiders in the form of social workers, members of a church group, and campaigners for a federal election all served to draw people to town. Thus, for one reason or another, many people spent much of their summer in town or in wage employment elsewhere. Ironically, the summer months were the time when the most children were in town, and these were also the months when school was not in session.

Other productive activities

The production of bush items did not only occur in bush camps. People hunted for big game, birds, set nets for fish, organized berry-picking expeditions in the vicinity of town or more distant, went upstream to cut and float large logs for firewood[11], and collected brush near town. One man who held a full time job lived with his family across the Mackenzie River from town and commuted between camp and work daily. The extent of harvest of bush products in this manner was difficult to assess, but it seemed to represent a significant amount of the diet and activities of many families. It was considered important for taste, nutritional and financial reasons not to go for too long without bush food. At one point during the summer, hunters from town killed two moose, and the meat was extensively distributed.

One other significant form of bush production activity occurred in early July in the form of a journey of five families to Loche Lake (Lac a Jacques) up the Rabbitskin (Hare Indian) River (see Figure 1). This trip was much talked about during spring hunt and was an annual event for many families (the Rabbitskin is only navigable in early summer when water levels are high). It was considered to be a summer vacation camping trip, and a festive atmosphere characterized the three-day event. However, a considerable amount of productive activity occurred, in that a moose was shot on the way to Loche Lake, numerous large jackfish were caught during tea breaks on the Rabbitskin River, and birds were hunted both on the river and the lake. Camp was set up on a sandy bay on Loche Lake, with the requisite pole, brush and firewood collecting. Small abrasive plants were utilized as pot scrapers. There was considerable relaxation and social activities, such as visiting, fishing with line and hook, children swimming and a journey to an area important to various camp members. People discussed the importance of the lake to them, areas where relatives or friends had lived, trail locations, and places where accidents had occurred or people were buried. The value of this lake, in a social sense, and for its natural beauty, was emphasized repeatedly and was a major factor in the enjoyment by the group of their vacation.

---

[11] The majority of the homes in Fort Good Hope are heated by wood burning stoves.

B. Summary: Values of these activities to the Dene

Throughout the preceeding description of subsistence activities, some of the values attached to these activities as they were described at the time were indicated. Other conversations, involving numerous other individuals and concerning activities in which I did not take part, added to and clarified the values that these activities have for the Dene.

Among the most stressed values was that of self-sufficiency. Engaging in bush subsistence activities was seen as enabling people to produce many of their needs and wants, and expertise in these activities was good insurance in times of need. Interrelated with this material aspect of self sufficiency was the control of one's own work schedule and choice of companions, as well as a measure of independence from the vagarities of seasonal wage employment. The ability to be one's own boss, and to have an alternative way to feed a family and thus retain a measure of flexibility in dealing with the job market, were highly esteemed.

Bush life was also considered healthier than town life, in both a physical and spiritual/psychological sense. Many families found the bush to be a place to eat well, work hard with family and friends, including children, to be outdoors, to escape many of the pressures of town life, and generally to live and work in a healthy environment. People in town spoke enviously of how healthy, fat, and brown children spending the spring/summer in the bush would become.

Bush life was seen as a preferable way to raise children than town life by a number of families. Children untrained in bush activities would not be able to make their own living in times of hardship, were subject to getting into trouble by staying in town, were not as self motivated or as energetic workers, and lacked a strong feeling of identity which was attributed to bush-educated children. Though all families seemed to desire that their children have good basic schooling, it was also important that they spend much of their early years in the bush. School was therefore sporadically attended, which proved to be a drawback to completing formal schooling, particularly beyond grade 5. Rather than deprive their children of their bush education, numerous parents expressed dissatisfaction with the scheduling and organization of the local public school for its inability to accomodate the cycle of bush activities.

In a very practical sense, bush activities provided certain items which were very expensive to acquire in town, particularly meat. This was certainly important, especially when cash was often scarce and families were relatively large. The quality of bush meat and its superiority over store-bought meat, in terms of taste, health-giving properties (nutrition), freshness, and the cuts available (for example, I knew of no one who made drymeat from storebought meat) were much emphasized values.

Bush activities were also valued for what might be called their cultural aspects. Young people expressed pleasure in being with older people and learning from them. Slavey-Hare was spoken over half of the time (depending on the participants), and history and old stories were told in the context of daily bush activities. Values such as hard work, skillfulness in bush activities, and sharing were features of daily life. These features, together with the enjoyment of the beauty of the land around them, were spoken of often. As well, stories were often related of incidents that occurred to some friend, relation, or ancestor at a particular place, tying the present bush activities to those of others. Often, these stories were the subject of reverence, and through them were an important expression of respect.

V. Chapter Five. Subsistence and commodity production

In Chapter Two, the major trends in valuing subsistence production were reviewed. These rested on the formation of an analogy between subsistence products and commodities, and utilized the tools of mainstream economics. The researchers themselves, as well as others, identified deficiencies in this aproach which were seemingly not resolvable within that particular framework. These problems were not considered to render the approach unusable for the task at hand, that of quantifying the contribution of the subsistence sector of a community-wide or territory-wide economy for comparison with the inputs of the cash sector.

Chapter Three consisted of a discussion on the subject of compensation and related measures which form the impetus of most current studies seeking to value subsistence production. In practice, compensation was shown to be intimately connected to legislative and judicial institutions. Limits to the flexibility of compensation measures for Native subsistence production stem from difficulties in imputing a cash value to this production, and from a reluctance to pursue other, non-monetary, forms of compensation such as restoration and replacement-in-kind. Although these shortcomings are attributable to political institutions, the economic underpinnings of compensation in the field of welfare economics also determine its directions and limitations.

In Chapter Four, aspects of subsistence production in the Dene economy of Fort Good Hope were described. The emphasis of the description was to show how activities were organized and interrelated, what was produced, and who took part, as well as giving a picture of some of the social activities that were a part of this production. This chapter ended with a listing of some of the qualities of subsistence production activities that are valued by the Dene, and hence require inclusion in any framework seeking to assess the value of their loss or diminution.

The focus of this chapter is to examine various perspectives in economic theory as they relate to hunter-gatherers, valuing subsistence production and compensation. Admittedly, this treatment will be somewhat superficial, as a thorough overview would constitute a major work in itself. The objectives of this review are: 1) to examine what some economic theorists have said on the subject of value; 2) to examine the theoretical framework from which previous valuation studies have stemmed; 3) to discuss the position of compensation within a subdiscipline of mainstream economics, welfare economics; 4) to review the problems and proposed solutions that have been encountered in economic analyses of societies such as the Dene (i.e., the "formalist-substantivist debate" in economic anthropology); and 5) to introduce and examine an alternative framework having the potential for describing the Dene economy in a way appropriate for the current purposes of such studies.

A. Classical political economy and neoclassical economics

Classical political economists of the 18th and 19th century were concerned with describing the "laws of motion" of European economies of the day. Their primary focus was the development and spread of capitalism. Two who had a particularly great influence on those who followed, Adam Smith and Karl Marx, began their inquiries with commodities and the genesis of value.

Classical thoughts on value

For both Smith and Marx, the question of value was central to their analyses. Smith began by dividing value into two components: value in use and value in exchange. He noted that there is no necessary correspondence between the two types of value, some things having considerable value in use with little value in exchange, while others have little value in use and great exchange value (Smith 1908:31).

The conditions about which Smith was writing were those prevalent in Europe in the mid 1700s. Thus, his emphasis was on exchange value, and how this might be derived. His central assertion was that exchange value is determined by the quantity of labour embodied in the commodity.

> "The value of any commodity, therefore, to the person who possesses it, and who means not to use or consume it, himself, but to exchange it for other commodities,

> is equal to the quantity of labour which it enables him to purchase or command. Labour, therefore, is the real measure of the exchangeable value of all commodities." (*ibid.*,32-33)

Writing in the 19th century, Marx also divided value into use-value and exchange-value. As with Smith, he described the use value of an object as being inherent in it, and the exchange value of a commodity as stemming from the labour invested in it.

> "If then we leave out of consideration the use-value of commodities, they have only one common property left, that of being products of labour." (Marx 1957:4)

Marx described how the different forms of value are realized in a commodity. Use value is only derived through use or consumption, and is independent of the labour required to appropriate it. However, commodities, being items produced for exchange, also consist of exchange value, which is based on the quantity of labour invested in them, as realized in exchange. This total value (use-value and exchange-value) is manifested in the "social relations of commodity to commodity" (*ibid.*, 15). In summary,

> "A commodity is defined as a socially desireable thing with a use-value and an exchange-value. The use-value of a commodity is an intrinsic property of a thing desired or discovered by society at different stages in its historical evolution. ... 'Exchange-value' on the other hand is an extrinsic property, and is the defining characteristic of a commodity. 'Exchange-value' refers to the quantitative proportion in which use-values of one sort are exchanged for those of another sort." (Gregory 1982:10-11)

Both Smith and Marx were mainly concerned with uncovering the mechanisms of the forms of capitalism in European society of their times. They did not have as a primary interest the precursor economic systems, or the non-capitalist societies of their time, although Marx did address pre-capitalist economic formations as historic antecedents to capitalism (Marx 1980). A number of Marxist economists since that time have adopted an evolutionary perspective in the study of pre-capitalist societies, stemming from the work of Morgan and other anthropologists interested in general evolution (e.g., Engels 1972, Mandel 1971). This limits the usefulness of their work for the study of societies such as the Dene, where capitalist relations are not the only ones in effect, and whose historical development differs from that of European capitalist nations. Consequently, evolutionary approaches offer little to the analysis of current societies based on hunting traditions, particularly in the context of protecting their ability to conduct their way of life.

It is in his analysis of modes of production that Marx's work is most useful for analyzing the Dene economy. Through attention to both the forces of production and the social relations of production, many factors are included that are omitted in other schema. Marx characterized pre-capitalist modes of production:

> "We have an original unity between a specific form of community or tribal unit and the property in nature connected with it, or the relation to the objective conditions of production as naturally existing, as the objective being of the individual by means of the community. Now this unity, which in one sense appears as the particular form of property, has its living reality in a specific *mode of production* itself, and this mode appears equally as the relationship of the individuals to one another and as their specific daily behaviour towards inorganic nature, their specific mode of labour (which is always family labour and often communal labour). The community itself appears as the first great force of production; special kinds of conditions of production (e.g. animal husbandry, agriculture) lead to the evolution of a special mode of production and special forces of production, both objective and subjective, the latter appearing as qualities of the individuals." (Marx 1980:94-95)

The concept of modes of production, and the relationships that it illuminates, will form the basis of the framework proposed for analyzing the Dene economy, later in this chapter.

Neoclassical economics and utility

The field of mainstream, or "neoclassical", economics, has produced a different slant on the question of valuation. In a standard introductory university level economics textbook, Lipsey *et al* (1973) criticized Smith and Marx for their use of use-value and exchange-value, saying that these categories imply absolutes.

> "... (early economists) referred to market values as *exchange values* and to total utilities as *use values*. They posed their problem by saying that use values should be, but were observed not to be, related to exchange values .... As has been seen, market behavior is not expected to have any necessary relation to total utility. Utility maximization depends on equating market values with marginal utilities, not with total utilities." (Lipsey *et al* 1973:131-132) (emphasis in original)

Marginal utility, a major theoretical element in neoclassical economics, is the relevant item in considerations of choices between a little more or a little less, or the utility attached by an individual to the last unit of a stock of homogeneous goods. The market behaviour of individuals making such decisions demonstrated the marginal utility of the goods in question.

(Dupuit 1844, in Ekelund and Hébert 1975:219).

However, the neoclassical economics criticism of the concept of use value is somewhat at cross-purposes, in that proponents of the two approaches (early political economists and modern mainstream neoclassical economists) based their discussions on different premises, and thus directed their analyses at different aspects of the economy. The early classical economists were endeavouring to describe the mechanism of commodity production in the capitalist economy of their day. These political economists, specifically Quesnay, Smith, Ricardo, Marx, and, later, Sraffa, according to Gregory:

> "... were all concerned to lay bare the principles governing the reproduction of the surplus product in different economic systems, and they all gave particular attention to the analysis of surplus reproduction in European capitalist economies." (Gregory 1982:6-7)

The major concern here, by Marx, was with the relations between groups of people standing in certain positions with respect to the control of production, or classes. Classes differed from each other and related to each other in two spheres: via control of the means of production, and through the social relations of production.

> "A mode of production is an articulated combination of relations of production and forces of production structured by the dominance of relations of production. The relations of production define a specific mode of appropriation of surplus labour and the specific form of social distribution of the means of production corresponding to that mode of appropriation of surplus labour." (Hindess and Hirst 1975:9-10)

The mainstream economists, on the other hand, saw economics in a subjective manner, resting on individual decision making, whereby the individual seeks to maximize utility in a situation of unlimited wants and, by definition, scarce resources. The economics approach, propounded by Jevons, Menger, Walras, Samuelson, and Debreu:

> "...shifted the central concern of economic analysis from the analysis of surplus reproduction in class-based societies to the general analysis of scarcity and individual choice. This involved a shift from a study of the particular 'laws of motion' of European capitalism to the universal laws of consumer choice. The principal problem of Economics is the analysis of consumer behaviour under conditions of unlimited wants and limited resources. The problem is analysed in terms of a model which assumes that an individual maximizes utility, subject to certain constraints." (Gregory 1982:7)

Thus, the concepts of use value and exchange value, as used by Smith and Marx, do not have the same role in their model as they would in the subjective mainstream economics model.

> "The terms 'utility', 'use-value' and 'exchange-value' caused ... writers endless confusion. Clark (1886:74) realized that 'utility is never identical to value, either in use or exchange'; ..." (*ibid.*,25)

Use value, exchange value and utility

The different theroetical slants on the question of value represented by the concepts of use-value, exchange-value and marginal utility have implications for the study of subsistence production in hunting-gathering societies. Following Marx's and Smith's distinction, production for use or personal (family) subsistence would involve the production of items having use value. The measure of this value would be the labour involved in production. This value is intrinsic in the product, and differs from the exchange value of the product, which is dependent on the extrinsic factors brought into play in the context of exchange. Theoretically, it should be possible to quantify the labour involved in subsistence production and thereby quantify its value in some manner (although in practice it is often difficult to separate the labour involved in producing a particular item, as subsistence production activities tend to be interrelated). However, the description of a particular product is inadequate as a description of production, a production process, or relations of production. Thus, the usefulness of attempting to quantify production for use-value is doubtful.

Economists, on the other hand, are positive and prescriptive in their ability to determine utility. Based on the universal necessity of choosing between alternative options in all aspects of human life, the ability to calculate the marginal utility of a product is implicit. What this calculation reflects is the act of economizing, in the subjective sense. However, the review of research on the valuation of subsistence products revealed that in a number of areas the calculation of marginal utility is problematic when applied to subsistence products, and many elements of the organization and social relations of production defy quantification and resist inclusion in a model of economizing behaviour. Aside from this difficulty, the utility model seeks to describe the choices made of one product or activity over another, but is unable to differentiate between subsistence and commodity production as distinct types. The basic nature of the choice-making act is too low a common denominator to illuminate such distinctions. Indeed, Gregory argues that this is one of the major, and insidious, reasons for its popularity among representatives of colonizing powers. The economics approach enables the issue of control over means of production to be masked (Gregory 1982:210).

B. Compensation and welfare economics

Compensation, in the legal sense, stems from a branch of mainstream economics, welfare economics. According to Hébert and Ekelund, historians of economic theory and method,welfare economics is "that part of the general body of economic theory that is concerned primarily with policy" (Hébert and Ekelund 1984:46). In classical economics there was no such specialization between 'value-free' and normative economics. However, neoclassical economics developed a branch which sought to be scientific, analytical, descriptive, and generally 'positive' (e.g., econometrics), and a branch which dealt in detail with value judgements (i.e., implying recommendations of some kind), welfare economics. Welfare economics necessarily deals with value judgements in that any policy recommendations by their nature involve assumptions about what is desireable or beneficial. This is done through the operation of a social welfare function, which is an ordering of the objectives of a society made by those members (or one member, in the case of a dictatorship) who are empowered to make such choices. Much of the basis of welfare economics rests on unmeasureable qualitative concepts of ethics (*ibid.*,47-48).

> "In the 1870s economics took a decidedly subjectivist turn as it was reconstructed on the twin pillars of utility and the mathematical concept of the margin. The new approach shunned questions of economic growth *per se* and concentrated instead on the question of allocative efficiency in a regimen of fixed resources. Besides a basic reorientation of value theory, the neoclassical approach spawned a new conception of economic welfare. Welfare became divorced from the mere notion of physical goods and reoriented toward considerations of 'satisfaction' and 'utility' — decidedly subjective maximands." (*ibid.*, 52)

Welfare economics has two fundamental precepts, the first being the subjective utility theory as the basis of a theory of value, which includes the marginal utility concept. The bearing which this had on the analysis of value is discussed elsewhere in this chapter. The second basic principle stems from Bentham's utilitarian concept that free exchange and competitive markets do not necessarily result in universal welfare maximization in society, contrary to Smith's proposed 'invisible hand' (*ibid.*, 53).

Consumer surplus

Dupuis, in 1853, distinguished utility from value, saying that utility was but one element of value (Ekelund and Hébert 1975:219-225). Utility could be measured by the maximum amount that a consumer would be willing to pay for a good. The difference between this amount and what the consumer actually paid for the good was termed the 'consumer's surplus'. Problems were subsequently encountered both in measuring an individual consumer's surplus and, particularly, in measuring aggregate consumers' surplus.

> "Since utility is a subjective quantum, either cardinal or ordinal measures will vary from individual to individual. Because incomes and other factors (tastes, etc.) vary from individual to individual, demand prices cannot be counted upon to carry the same 'utility weight' among individual demanders. A source of error is therefore introduced when money measures of consumer's surplus are calculated using market demand curves. This criticism does not deny the existence of a utility surplus; it simply means that money expenditures cannot be used to measure it accurately." (Hébert and Ekelund 1984:59)

This tendency for consumer's surplus to actually measure the marginal utility of income is especially significant in cases where two or more types of resource users have great differences in income, e.g., wildlife habitat used by recreational users, subsistence hunters, and industry. The resulting assignments of cash values are exceedingly tenuous.

Consumer's surplus is widely used in determining compensation values as well. It has been demonstrated that there is a discrepancy between the consumer's surplus, or willingness to pay, and willingness to be compensated.

> "Of more importance here than the accuracy of various techniques is that an appropriate basis for the evaluation be selected. Typically, economic values are taken to be the sums people are willing to pay to obtain the product or service at

> issue. For outputs of a project or scheme this is an appropriate measure of the value — of more energy, increased transportation, or more camping facilities. However, for the class of output services in the present cases of compensation for losses imposed when public resources or assets are converted to a new use, the willingness-to-pay measure is not appropriate; it would likely lead to an inefficient use of resources. Where resources or assets are being enjoyed in their present state — as with an historic site or wilderness area, for example — an evaluation which reflects the compensation required by the present users to willingly forgo this use is instead the appropriate measure, as this more accurately measures the actual welfare loss associated with foregoing the continued availability." (Knetsch 1983:161)

The phenomenon of the willingness to be compensated being far greater than the willingness to pay has been shown to operate even in cases where income is not a factor (*ibid.*, 30-31). The use of the willingness to be compensated measure over the willingness to pay method has implications for the effects of the actual compensation:

> "The use of the 'compensation-required' measure of value for losses of the present use of a resource may seem to present a bias toward present use over the 'challenger' use, represented by the development activity, or the use after conversion. However, this measure of value more accurately assures that only those projects are implemented for which the willingness to pay for the gains exceeds the losses of welfare imposed on those made less well off by the change. The use of such compensation-demand measures better accounts for the full extent of losses, and therefore leads to the most efficient allocation and use of available resources." (*ibid.*, 161)

Pareto optimality

Drawing nearer to the compensation issue, welfare economics today is based on value judgements first elucidated by Vilfredo Pareto in 1906 (Ekelund and Hébert 1975:330-332). He stated that welfare is increased if one person is made better off while no one is made worse off. Three principles were at the heart of his analysis:

> "(1) Concern is with the welfare of all members of society. ...
> (2) An individual is considered the best judge of his own welfare, which is viewed entirely subjectively. ... In other words, no individual may impose his or her own preferences upon any other individual.
> (3) Any change in the allocation of resources that increases the welfare of at least one individual without reducing the welfare of any other individual is said to increase social welfare." (Hébert and Ekelund 1984:65)

This approach is fundamentally conservative in that it does not consider the initial distribution of resources (e.g., an improvement in the welfare of a wealthy individual without changing the position of an impoverished individual would be considered an increase in social welfare); nor does it judge a welfare improvement for some at the expense of a similar improvement for others to be unfair. As well, the individualistic nature of this approach makes the determination of social welfare functions problematic. Pareto value judgements are not universally accepted, but dominate modern welfare economics (*ibid.*, 65)

The compensation principle and social welfare functions

The Pareto principle was modified in the late 1930s by Kaldor and Hicks with the addition of the 'compensation principle':

> "... the compensation principle states that B is preferred to A if, in moving from A to B, the gainers can compensate the losers such that everyone can be better off. Unlike the Paretian principle, the Kaldor-Hicks criterion does not require the *actual* payment of compensation. Kaldor and Hicks eschewed this stipulation because in their view the actual payment of compensation involves a value judgement (as though the Paretian criterion does not!). The ultimate question posed by the compensation principle, of course, is what constitutes the ideal distribution of income, a question Kaldor and Hicks were understandably reluctant to tackle." (*ibid.*, 67)

The compensation principle contained a number of theoretical stumbling blocks to its practicality. Without detailing the various problems (e.g., 'reversal' and 'intransitivity'), it is possible to generate the criticism that it is necessary to consider all possible distributions of resource bundles in order to determine where the greatest potential gains may be realized. This leads to the notion of the social welfare function.

The social welfare function, as postulated by Bergson in 1938, stated that:

> "(1) an increase in the utility of any one individual, *ceteris paribus*, increases social welfare; (2)if one individual is made worse off, then another individual must be made better off in order to retain the same level of social welfare; and (3) if some individual has a very high level of utility and another has a very low level of utility, then society is willing to give up some of the former's utility to obtain an increase in the latter's, with the intensity of this trade-off depending on the degree of inequality." (*ibid.*, 69)

The social welfare function has been considered impractical because the issue of whether different utility weights should be applied to different individuals or groups is highly controversial, in that it ultimately implies income distribution, and it has been shown to be unachieved/unachievable on theoretical and ethical grounds to attempt to aggregate individual preferences in a society. Many economists today reject the notion that the social welfare function can be used to generate practical economic policies (*ibid.*, 72).

The seemingly insurmountable measurement problems which have plagued social welfare functions have had serious implications for welfare economics as a whole. As well:

> "One overriding observation is that welfare economics in the twentieth century has never strayed far from the Paretian design, nor is it likely to do so in the forseeable future. But some interesting extensions have taken place in the development of the property-rights literature and in the search for the theoretical underpinnings of optimal constitutions. It is predicted that most of the new insights in future welfare economics will stem from this 'new institutionalism' rather that from more refined applications of neoclassical design. If this view is correct, a re-reading of the classic treatises on political economy and political theory may become more than a harmless diversion for welfare economists." (*ibid.*, 80)

C. Compensation and property rights

From the previous discussion it can be seen that the issue of compensation is clouded in the field of welfare economics, even when dealing with 'tangible' resources. Compensation for a way of life or other unquantifiable assets was not a consideration of welfare economics.

Nevertheless, in reality compensation is negotiated and awarded, although it is in the realm of government and legal policy makers rather than economic theorists. Instead of relying on concepts of general social welfare, compensation decisions are based on equity and allocative efficiency criteria. Major considerations in conflicts over the use of environmental resources are the actual nature and value of the resources in question and the property rights of the claimants. In practice, these are two very separate entities:

> "... the common presumption [is] that if the value of goodwill is recognized by the market (which it is) and can therefore be exchanged for a sum of money, then it must surely be reckoned that this interest represents property. However, as Holmes put it in *International News Service v. Associated Press*: 'Property, a creation of law, does not arise from value, although exchangeable — a matter of fact. Many exchangeable values may be destroyed intentionally without compensation. Property depends on exclusion by law from interference ...' That is, just because there is a market value does not mean that there is an entitlement that should be protected." (Knetsch 1983:86)

For example, land claims derive from the property rights of Native northerners which require just compensation under the legal system of Canada. Canadian law recognizes a myriad of values, e.g., entitlements to a scenic view, compensation for goodwill and licenses, and compensation for recreation losses, although "rarely are more than financial losses compensable" (Knetsch 1983:172). Nevertheless, the guiding principles of equity, efficiency, and fairness do not rule out compensation for losses of intangible assets.

> "Measurement remains a persistent problem. While the values of gains and losses are widely acknowledged to underlie the development of legal rules, as well as figure prominently in individual disputes, there is less enthusiasm for their quantification than might be expected. Most measurement exercises have been narrowly confined to such things as support for particular claims of injury rather than seeking improved methods and better estimates. There are few instances where positive incentives are created to produce better measures; instead, inhibitions are, as a practical matter, heightened by the explicit exclusion of evidence of non-pecuniary values by rules based on the presumption that the numbers are unobtainable. Thus, if the emotional distress and sentimental value lost in a compulsary acquisition are ruled not to be compensable on grounds that they are 'simply not capable of measurement in terms of dollars,' then there is little point in a claimant attempting to quantify such losses, and the presumption that such values defy measurement will be further perpetuated rather than refuted. Although a bit circular, the result of this institutional inclination is to provide little encouragement to pursue measurement exercises." (Knetsch 1983:172)

The second major issue in determining compensation is the property rights of the claimants. Property rights, along with the entire legal system in Canada, is generally depicted as arising from British law and instituted as a result of British domination.

> "It is commonly assumed that North America was juridically a vacant land when first encountered by Europeans. Bit by bit, lands were wrested from the wilderness and settled or exploited under grants from a European monarch, who had obtained complete sovereignty and title to the soil upon discovery. All land rights in Canada, other than prescriptive rights, stem diretly or indirectly from Crown grants. Our laws, legal institutions, and constitutional arrangements all derive from Europe or were created by European settlers. Our law-making bodies ultimately owe their authority to the British Parliament or the British Crown. There are, in a word, no truly indigenous laws, rights, legislatures, or courts in Canada." (Slattery 1984:361)

However, Canadian judicial history is not as straightforward as this model might indicate. As the previous author goes on to state, Canada was not an uninhabited area prior to the arrival of Europeans, and the legal, judicial, and property rights of many of the original inhabitants were not terminated subsequently. Consequently, many Native rights are still in existence, and were reinforced by the Constitution Act of 1982.

The perspective of the Canadian government on the position of Native rights was expressed in the context of a Native Claims policy, which stated:

> "A policy statement in 1973 covered two areas of contention. The first was concerned with the government's lawful obligations to Indian people. By this was meant the questions arising from grievances that Indian people might have about fulfillment of existing treaties or the actual administration of lands and other assets under the various Indian Acts.
>
> The policy statement acknowledged another factor that needed to be dealt with. Because of historical reasons — continuing use and occupancy of traditional lands — there were areas in which Native people clearly still had aboriginal interests. Furthermore these interests had not been dealt with by treaty nor did any specific legislation exist that took precedence over these interests. Since any settlement of claims based on these criteria could include a variety of terms such as protection of hunting, fishing and trapping, land title, money, as well as other rights and benefits, in exchange for a release of the general and undefined Native title, such claims came to be called comprehensive claims.
>
> In short, the statement indicated two new approaches in respect to comprehensive claims. The first was that the federal government was prepared to accept land claims based on traditional use and occupancy and second, that although any acceptance of such a claim would not be an admission of legal liability, the federal government was willing to negotiate settlements of such claims." (Canada 1981:11-12)

The perspective of Native people has emphasized their continuing rights.

> "I think that we need to look at overhauling the land-claims policy. The reason I say this is that just the title 'land claims' itself, from the government perspective, means that the native or aboriginal peoples are claiming land. Our position has always been that the Dene are not claiming land. We own the land. It is the government and the institutions and the corporations that are claiming land." (Norwegian 1985:4)

The question of property, then, is central to the resolution of disputes over Native land.

Property

The concept of property is basic to the legal system of Canadian society and regulates not only matters of compensation, but most of the economic and legal relationships between individuals, groups, corporate entities, and governments.

> "Property is a social creation (*jure humano*) that orders and maintains specific relations between people. It is not, as it is used in an everyday sense, *what* is owned (or an object) but the rights attached to ownership; specifically, it is the right to control the use or benefit to which ownership is put. ... property [is] much more than personal possessions (or chattels); it is the right to the use or benefit of things, tangible or not, enforceable by law." (Clement 1983:212)

There exists in Canada essentially three types of property:

> "As a first approximation of basic types of property relations under capitalism, we can begin with the three distinctions offered by C.B. Macpherson. ***Private property*** is 'the right of an individual (or a corporate entity) to exclude others from some use or benefit of something'. ***State property*** is 'a right of a corporate entity — the state or the government or one of its agencies — to exclude others, not [as *common property* is ...] an individual right not to be excluded.' (Macpherson 1973:123)" (*ibid.*,213)

The role of government (the state) in property is especially significant in the case of Native use of natural resources in northern Canada. As previously stated, government has a major role in this area, due to its authority in Native affairs, the jurisdiction of environmental issues, and its control of public lands. The relationship of state property, private property, and common property dictate the context of resource allocation.

> "It is crucial to correctly locate the state in our understanding of property, particularly to distinguish state from common property and specify the relationship between the state and private property. Macpherson convincingly argues that 'the state indeed creates and enforces the right which each individual has in things the state declares to be for common use [i.e., common property]. But so does the state create and enforce the exclusive rights which are private property ... The state *creates* the rights, individuals *have* the rights.' And he quickly adds, corporate property (which is the recognized rights of a group) is an extension of individual property. The key, as far as state property is concerned, is that it 'consists of rights which the state has not only created but has kept for itself' (Macpherson 1978:4-5). There is no essential contradiction between state and private property. Both are hierarchically organized such that those claiming the property rights have what will later be referred to as economic ownership and possession, while those excluded have the obligation to labour. The only contradiction appears between these two types of property and common property; that is, the right not to be excluded, which undermines an essential quality of state and private property, since everyone can claim the use and benefit of this form of property." (*ibid.*,213-214)

In the discussion of the more practical aspects of property rights in Chapter Three, it was observed that common property resources are more often overused and common property rights less clear and enforceable than with private property. Protection of rights is therefore dependent on the power to exclude others from enjoying certain benefits, as rights are currently handled. With respect to common property, this is attained by its transformation to private property. This has been a common function of government.

> "An important illustration of the state creating private property out of common property occurred in the initial stages of colonization in North America when the bulk of the land was alienated from the native people and turned into private

> property, often given over to corporations, such as the Hudson's Bay Company or the Canadian Pacific Railway (having passed through the various stages of common and state property)." (*ibid.*, 215)

Government continues to transfer common property to private property, through such means as granting licenses to fish the resources of the sea and establishing a 200 mile offshore ownership limit to fishery resources. As well:

> "... the state creates the conditions whereby capital can realize itself by overcoming the barriers imposed by alternative systems of production. The first [example] was a ruling concerning the lands of the Inuit of the Baker Lake area:
> 'A Federal Court judge ruled yesterday that the Inuit have aboriginal title to about 130,000 square kilometers of the Northwest Territories. In his 65-page judgement [Judge Patrick Mahoney] said the Inuit have no surface rights. He added that on Dec. 17 he will lift the order which has restricted exploration in the Baker Lake area since 1977. ... [Federal Government lawyer Luther Chambers is quoted as saying] 'All they got was that they have the right to hunt and fish. The way I see it, the Government is free to deal with the land as it sees fit ... to issue mining permits after Dec. 17.' (*Globe and Mail*, 16 November 1979:4)
> ... In [this] illustration, capitalist mining and energy companies are ensured access to 'their' property rights (as created by the state) in the form of mineral claims. In [this case], these are claims created by the state and turned into private property, overriding the claims to the lands by those outside the capitalist class." (*ibid.*, 215-216)

It is the (somewhat cynical) opinion of the previous author that the guiding rationale of government in these property rights conflicts is to side naturally with capitalist interests.

> "While it appears that the state creates property rights for capital, it is actually capital that created the capitalist state to enforce the rights capital has appropriated." (*ibid.*, 211)

Following from this impression, the role of government as an arbitrator in property rights disputes (including compensation claims) is not one unguided by certain goals. How these guiding principles might affect the nature of the outcome of disputes or the types of decisions and factors that are considered is a matter that could be of considerable importance to Native groups.

> "Crucial to understanding how the rights of property are reproduced and transformed is the existence of a state to mediate each process. Property rights always have some limitations on their exercise. As the embodiment of social relations, there must be limits, since various rights invariably interact and, as such, require means to establish bounds. The state is often regarded as the 'umpire' of these various claims. In some senses it is primarily arbitrating competing claims among capitalists (hence the Supreme Court's primary activity) and conditioning capital's right to exploit other classes." (*ibid.*, 211)

Clement further describes the role of government in alienating property rights from primary independent producers (petit-bourgeois, such as small farmers and fishermen) through the transformation of their common property rights to private property (fishing licensing, marketing of produce to large conglomerates, etc.). In the case of Native northerners, rights to vast amounts of land and other related rights are traded in return for more enforceable and clearly defined private property rights. As was seen in Chapter Three, compensation for rights forgone is generally a part of Native Claims settlements. What will follow is a brief description of one type of rights obtainable in return.

Estate in fee simple

The maximum control and interest in land that is possible in Canada is an estate in fee simple. However, this does not amount to actual ownership, and involves certain restrictions on what may be done with the land. The only entity capable of outright ownership is the Crown, or government, which also retains the authority to expropriate land, including that granted in fee simple, if necessary for military purposes or other reasons which are deemed in the public interest (e.g., see Slattery 1984:384).

> "All parts of Canada have been, at some time, British colonies. The method of establishment of law in a British colony depended on whether the colony was acquired (a) by settlement, (b) by conquest or (c) by treaty or cession. ... Canada as a whole, was acquired in all three ways. ...
>
> The only inheritable freehold estates are an estate in fee simple and an estate in tail, or an estate tail.
>
> An estate in fee simple in a parcel of land is one granted or transmitted, absolutely, to a person and his heirs, forever, whoever the heirs may be. It is the greatest estate that can be held by a subject. The holder of the estate is called the tenant in fee simple.
>
> The holder of an estate in fee simple also has, as an incident of his estate, the right to alienate the land, that is, to transfer it to another person." (Anger and Honsberger 1959:1,14,21)

Limitations exist to this tenancy

> "The Fee Simple. Fees being estates of inheritance, a fee whose course of devolution was simply to "heirs", without qualification, was a fee "simple".
>
> It was apparently assumed, in the beginning, that a fee simple would endure forever. This axiom of the medieval law's mathematics of estates had important consequences. Today we have abundant statistical information contradictory of such an assumption. Heirs, both lineal and collateral may soon die out. In fact, escheat to the state of fees simple for which no heir can be found is familiar to newspaper readers.

> While the feudal system retained vitality even the fee simple to a tenant was not an absolute estate: only the ultimate chief lord, the crown, held that. But the feudal system, as already noted, never had any reality on this continent. Colonial socage tenants in fee simple were virtually complete and absolute owners. Even today, however, no owner in fee simple has an 'absolute' interest in the sense that he may do with the property what he wills; it is subject to the control of the state, in the interest of his neighbors and of the common good, during his life and at his death." (Philbrick 1939:186-187)

Certain of the rights retained by the state are exemplified in the Western Arctic Claim with the Inuvialuit represented by the Committee for Original Peoples' Entitlement:

> "Laws of general application will apply to Inuvialuit lands, as they do to all private property. In addition, the government will continue to regulate development activities and will retain ultimate responsibility for environmental management." (Canada 1984:4)

This discussion has sought to illustrate the differentiation if the two issues of value determination and property rights in the context of compensation settlements. Describing the nature and values associated with production in Native societies and economies may be an important first step in the protection of this way of life. Appropriate property rights are also required to ensure this protection. What may actually be deemed the most appropriate system of rights is beyond the scope of this discussion. However, land held in common with wide-ranging customary usage, management, and governing systems such as those practiced by Native people in the north may not be adequately represented by a transferral to private property interests held by a corporate entity, a problem described, for example, by Berger for Alaskan Native groups (Berger 1985). Hence, comprehensive claims settlements have sought to acquire a range of specific rights (in exchange for a wider range of less specific ones) which are intended, at least from the Native perspective, to protect their way of life, social reproduction of their societies, and the ability to make changes and decisions as a people.

D. Economic anthropology: substantivists and formalists

The field of economics, as outlined above, was observed to have shortcomings for analysing economic systems other than capitalism, and for understanding the position of values and rights within these societies. This problem has received considerable attention in economic anthropology, and the ensuing debate will be briefly reviewed here.

The previous discussion of compensation and value has been drawn from modern mainstream economics, political science, and law. The models were developed, in economics, to deal with the particular case of capitalism, and did not seek to explain the mechanics of subsistence production, or how subsistence production might operate within a capitalist system. Thus, certain features of the Dene economy seemed not to apply to this model, in much the same manner as Mauss described for Polynesian and Melanesian societies:

> "...we see that a part of mankind, wealthy, hard-working and creating large surpluses, exchanges vast amounts in ways and for reasons other than those with which we are familiar from our own societies." (Mauss 1967:3)

This situation is common in economic anthropology, where either the societies studied by anthropologists, or their perspective on these societies, does not render them comparable to the analyses of capitalist economies by economists.

> "Economic theory, on the whole, is not geared to consider the problem of demand schedules where the alternatives are so restricted that there is no margin between utility and disutility - or to put it in other terms, where the choices are so few that no curve of indifference can be drawn between satisfactions and costs, where costs are always maximized, since individuals must work or starve. In situations such as these, the utility of any good recognized by the culture as having utility is maximized in its mere possession, where it is a tool; or in the very opportunity to consume it, if it is a commodity such as food. There is no inducement to trade it for something else, since there are no costs (disutilities) to be taken into account." (Herskovits 1952:15)
>
> "Choice is thus dictated by differentials in utility; but the utility is not measured in terms of alternate costs (prices) by the one who makes the choice, and is not measureable in quantitative terms by the student." (*ibid.*, 16-17)

The debate between the 'substantivist' and the 'formalist' schools of economic anthropology has highlighted the problem of the applicability of economic theory beyond capitalist economies, for which it was developed.

The formalist position, as represented by Scott Cook (1968), states that:

> "The basic assumption which economic analysis makes about the physical world is that the resources which it provides for human utilization are scarce (i.e., limited in relation to the demand for them). It is because of this scarcity that goods have to be shared out among the individual members of a social group, and it is the role of an economic system to perform this 'sharing out' task. From the economist's point of view, if there were no scarcity and consequently no need for goods to be shared out among individuals, there would be no economic system (Stonier and Hague 1957:3). While economists view scarcity as an inherent condition in any human situation, they consider it to have relevance in economic theory only when associated with the concept of 'economic good' (i.e., in order to get more of a given commodity, a quantity of some other commodity must be relinquished). Since a good is economically scarce only in relation to the demand for it, it follows that 'scarcity always means scarce in relation to demand' (Stonier and Hague 1957:26). In economic theory, then, 'scarcity' is a relative concept which reflects the interplay of biosocial (i.e., want and the resources of time and energy required to satisfy them) and ecological (i.e., physical and natural environmental) determinants." (Cook 1968:219)

The position of the substantivists, as stated by Karl Polanyi, is that:

> "The substantive meaning of economic derives from man's dependence for his living upon nature and his fellows. It refers to the interchange with his natural and social environment, in so far as this results in supplying him with the means of material want satisfaction.
>
> The formal meaning of economic derives from the logical character of the means-ends relationship, as apparent in such words as 'economical' or 'economizing'. It refers to a definite situation of choice, namely, that between the different uses of means induced by an insufficiency of those means. ...
>
> The two root meanings of 'economic', the substantive and the formal, have nothing in common. The latter derives from logic, the former from fact. ...
>
> It is our proposition that only the substantive meaning of 'economic' is capable of yielding the concepts that are required by the social sciences for an investigation of all the empirical economies of the past and present." (Polanyi 1968:122-123)

The substantivists point out that formal economists have not dealt with non-capitalist economies as their primary focus. The contentious element of the debate is whether or not the principles developed by neoclassical economics *could* be applied successfully to non-capitalist societies. In many cases, attempts to transfer concepts to different systems have been less that illuminating or even incorrect according to the substantivists.

> "The use of formal price theory concepts such as 'inelastic demand' in reference to primitive economies indicates an implicit market orientation: the prejudgement of economic organization by way of *a priori* assumption that market structure - or its functional equivalent - exists universally. A market orientation assumes that economic theory is universally relevant because it assumes that scarcity situations are universal and everywhere compel materially self-gainful economizing, such as maximization of consumer utility and production at least cost. ... The important

> work of Polanyi and his associates is that the economy-wide market mechanism, its materially self-gainful economizing and its monetized internal and external trade do not exist as integrative pattern in the primitive economies they consider. Rather, that the production and distribution of material goods are organized by transactional principles essentially different from market exchange." (Dalton 1968:152)

The substantivists claim that societies must be studied on their own terms, which is a similar contention to Boas's inductivism in response to the evolutionary perspectives of Morgan and Tylor. The substantivist perspective's major contribution to the question of valuing subsistence products in the Dene economy is the need to appreciate it on its own terms in the context of the system in which it operates.

Essentially, the substantivist-formalist debate is over the application of the principles of economics beyond the western market economy for which they were designed. The substantivist counter-proposal is that economic principles, characterized by exchanges (Davis 1973:8), must be examined as they are found to occur in other societies. These approaches may be considered similar from the perspective of classifying similarities and differences among various economic systems, in that neither is concerned with mechanisms of production and social reproduction as primary foci. As well, the analyses proposed by both methods do not lend themselves to comparing the Dene and capitalist economic institutions in a manner such that their differences and interrelationships may be readily analysed.

E. The Gift

The classical political economists' concern with uncovering the basic principles of capitalist economies was echoed in early anthropological writings by a desire to categorize and understand the workings of "primitive societies" (e.g., Morgan 1877). As previously discussed, the usefulnes of these studies for the analysis of hunter-gatherer economies was hampered by the evolutionary perspective that was adopted, equating simple technology with a low position on an evolutionary scale, juxtaposed to complex technologies and a high evolutionary position. However, these anthropological efforts did prove useful to certain early political economic studies (e.g., Engels 1972). Later anthropologists whose focus was restricted to the evolution of technology, but included as well social organization and production/exchange provided extensive data questioning the "simplicity" of primitive societies, and supplied key insights into the functioning of non-capitalist economies (e.g., Malinowski 1961).

The writings of political economists and certain anthropologists have been seen by some as two aspects of a single inquiry, to wit, that of discovering the governing principles of economic systems in human societies. An example of the synthesis of these fields in the works of one author will be presented here to examine the potential of this approach in the analysis of the Dene economy.

The political economy approach

Prior to the middle of the nineteenth century, the social sciences were not divided into the current specialties and disciplines (sociology, political sicence, economics, anthropology). Instead, their subject matter was dealt with in the study of political economy, which sought to explain the production and distribution of wealth within and between political entities and the classes that composed them (Wolf 1982:7-8). However, resulting from the social disorder brought about by the rapid capitalist expansion of the 19th century, the social sciences split into specialized disciplines in order to respond to the threat of social disintegration. Sociology became concerned with the social relations between individuals, as abstracted from their political, economic, and ideological context, and ultimately viewed these social relations as autonomous and causal. Economics "abandoned its concern with how socially organized populations produce to supply their polities and became instead a study of how demand creates markets" (*ibid*., 9). This study of markets in equilibrium focussed on exchange, dealt with production and consumption essentially as they relate to exchange, and thus ruled out considerations of class. Political science considered power in relation to government, removed from the social, economic, and ideological spheres, and by so doing emphasized the act of decision making. Cultural anthropology began as world anthropology, but came to be more concerned with cultures as distinct entities in isolation from other such entities. Within cultural anthropology, however, certain trends have sought to describe the interconnected nature of cultures and culture as an open system (*ibid.*, 9,11,18).

A return to a more holistic perspective, as represented by the political economy approach, has been advocated by individuals from various disciplines. Karl Marx was a major proponent of this approach, and his concept of modes of production — the particular combinations of material and social relations that characterize a society — are central to the political economy approach. The focus of this approach has similarities with the substantivist aproach in economic anthropology, particularly in the emphasis on understanding each society's mode of production on its own terms, which includes its history and relationships with other societies. However, unlike the substantivist focus on forms of exchange, the political economy approach considers production to be the primary determinant.

Basically, the political economy approach seeks to describe the mechanisms of production and social reproduction of a society, including the social relationships between the people or groups involved and the history of these relationships. Factors considered include social structure, environment, relationships with other societies, technology, economy, and class structure. Production and consumption are seen to be part of a circular process, and the particular mode of production of one society and the relationships that it implies do not hold true for other societies; each society must be understood in terms of its own unique history and productive relations.

An example of the application of the political economy approach in an anthropological study of a non-European society is found in the work of Chris Gregory. His objectives in his 1982 book, *Gifts and Commodities* were to analyse colonial Papua New Guinea and to critique neoclassical economic development theory. He accomplished this by presenting an alternative framework based on the work of Adam Smith, Karl Marx, D. Ricardo, P. Sraffa, Claude Levi-Strauss, Marcel Mauss and others, which he refered to as the political economy approach. He supported this approach for its superior descriptive and explanatory powers, as compared to the economics (neoclassical) approach (Gregory 1982:1,8).

Gregory traced the distinction between the economics approach and the political economy approach to the basic tenets of each, resting on the concepts of 'goods' and 'commodities'.

> "The problem with the Economics approach is that its supreme concept, 'goods' is subjectivist and universal which means that the theory of goods, by definition, has no objective empirical basis for distinguishing between different economic systems. The concept 'commodity', on the other hand, presupposes ... certain objective historical and social preconditions. If these conditions are not met, then the Political Economy approach says some theory other than the theory of commodities applies." (*ibid.*,8)

Gregory argued that the political economy approach is suitable for analysing non-capitalist economic systems in that it focusses on personal relations between people who stand in a variety of economic relationships with each other, whereas economics deals with consumers and objects of consumption which are seen to interact in ways specific to capitalist situations (i.e., maximization). He linked early political economists with anthropologists, saying that the latter are concerned with many of the same questions that interested people such as Quesnay, Smith, Ricardo and Marx.

> "Like the early Political Economists, the central focus of analysis of these anthropologists is the social relations of reproduction of particular social systems. The central concept of their theories is the 'gift'. This refers to the *personal relations* between people that the exchange of things in certain social contexts creates. It is to be contrasted with the *objective relations* between things that the exchange of commodities creates. The theory of gifts and the theory of commodities are compatible and together they stand opposed to the theory of goods with its focus on the *subjective relationship* between consumers and objects of desire. The gift economy and the commodity economy should be seen as just two of the many possible economic systems that the Political Economy approach is able to differentiate." (*ibid.*,8-9) (emphasis in original)

Gregory outlined four defining characteristics of the political economy approach:

> "The distinction between a commodity economy and a non-commodity economy ... is the first defining characteristic of the Political Economy approach. ... The second defining characteristic ... is the importance attached to the analysis of the social control exercised over land and other important means of production as the key to understanding economic activity. ... A third defining characteristic ... is the picture of production and consumption as a circular process. ... A fourth defining characteristic of the Political Economy paradigm is the 'logical-historical' method of enquiry." (*ibid.*,12-14)

He then stated that "the theory of gifts, as developed by Morgan (1877), Mauss (1967) and Levi-Strauss (1949) is a logical extension of the method of Political Economy to the analysis of anthropological data" (*ibid.*,15). This theory was developed in 1925 by Marcel Mauss in *The Gift* (1967) where he concentrated on economic structures in non-capitalist economies. Gift exchange in these economies is contrasted with commodity exchange in capitalist economies based on the inalienability of things in gift economies, creating debt and reciprocal dependence, and on the institution of private property and the alienability of things in capitalist economies.

> "... commodity exchange establishes a relationship between the objects exchanged, whereas gift exchange establishes a relationship between the subjects. In other words commodity exchange is a price-forming process, a system of purchase and sale. Gift exchange is not. ... The gift economy ... is a debt economy. The aim of a transactor in such an economy is to acquire as many gift-debtors as he possibly can and not to maximize profit, as it is in a commodity economy. What a gift transactor desires is the personal relationships that the exchange of gifts creates, and not the things themselves." (*ibid.*,19)

Mauss tied his theory of gifts to commodities through a three-stage evolutionary model. The first and most basic stage is the system of 'total prestations', involving the exchange of "courtesies, entertainments, ritual, military assistance, women, children, dances and feasts" (Mauss 1967:3). The second stage, arising from this, is the gift economy. The third is the commodity economy. Levi-Strauss contributed to the theory of the gift through his study of the exchange of people in *The Elementary Structures of Kinship* (1949), where he identified marriage in 'primitive' societies as a primary economic institution. Gregory cited contributions to the theory of the gift made since Levi-Strauss, such as that by Sahlins, who described the distinction between gift and commodity exchange as being fundamentally a matter of "kinship distance", gift exchange occurring between people who are relatives, and commodity exchange between strangers (Sahlins 1972:185-276). Godelier noted that a single object could function as a gift within a community and a commodity outside it (Godelier 1973:123) (Gregory 1982:23).

The political economy approach, in its operation, is equivalent to mode of production analysis, the theoretical underpinnings of which stem from Marx.

> "A mode of production refers to the technological and social dimensions of the ways in which a society, or social formation, carries out production and exchange — that is, its material reproduction (Asch 1979:88, O'Laughlin 1975). The technological aspect, known as the forces of production, consists of the ways in which resources are obtained, goods are produced and distributed, and labour organized. ... The social dimension of this approach, the relations of production, call attention to the ownership and control of the means of production and the

> ways in which goods are distributed (Cunningham 1978:38, Hedley 1979:283). ... Key elements in the concept of mode of production are the characteristics of the technology, or means of production, the ownership of the means of production, and the ideological expression of this ownership." (Hudson 1982:13-14)

When two or more modes of production operate in one economy — as in the case of the Dene, with a traditional bush subsistence mode linked in many ways with the surrounding capitalist economy — they are said to be 'articulated'. Thus, for the Carrier of British Columbia:

> "As used here, articulation refers to the integration of two or more modes of production within a single social formation dominated by one of the modes and its relations of production. Thus, while we may delineate a separate Carrier bush mode of production as a heuristic device, the overall analysis of change must take into account the extent to which Carrier social reproduction depends on state and corporate influences." (*ibid.*, 19-20)

Political economy and hunting societies

Basically, the political economy/mode of production approach has certain advantages for the analysis of the economies of societies based on a hunting-gathering productive system. Its strengths are in its power and scope of explanation [12], which enable the following:

1. Hunting-gathering economies can be examined in the context of other economic systems, thereby affording comparisons between commodity and non-commodity economies.
2. The focus is on production, and concomittant social relations. This also facilitates the analysis of various productive activities, such as those described for the Dene.
3. The explanations deal not only with the quantitative/quantifiable aspect of economies. Social relations are an important element of the resulting description, rather than

---

[12] "The purpose of evaluation is to assess the usefulness of an explanation. Four points are particularly important: first, the *scope* of the explanation, the range of events to which it can be applied; second, explanations differ in *precision*, in the accuracy of the expectations they generate and of the control procedures they imply; third, explanations differ in *power*, in the amount of control over an empirical situation that they permit; finally, explanations differ in *reliability*, in the amount of confidence we place on their use. The purposes that an explanation can serve will usually be defined by these four properties." (Meehan 1968:115) Precision is generally difficult in social science explanations, due to the problems of precise measurements of social science phenomena (*ibid.*,117).

intangibles separate from it.

4. The history of economic relations is considered. This enables comparisons with past situations in a society or with similar historic circumstances in other societies, important for cultures that have been strongly influenced by European colonial expansion. This perspective is vital for examining changes in productive systems, such as changes from a hunting to an industrial-capitalist mode of production

Two examples of the historical perspective of the political economy approach, relevant to the study of hunter-gatherers in the modern world, were given by Marx and Gregory. Marx discussed changes during the Enclosure Movement in the 14th and 15th centuries in Britain which resulted in the alienation of formerly self-sufficient farmer/herdsmen from their means of livelihood (Marx 1957:740-774). Gregory outlined the contact history of colonial Papua New Guinea to show the implications of the shift in the plantation system from supplying subsistence for workers and their families to a straight wage contract system. This resulted in greater strains on social ties, due to family separations and increases in the number of single men involved in wage labour. He also detailed the manner in which consumer goods were integrated into "traditional" Papua New Guinea society, the changes that occurred, and the fundamental relations that were retained or accentuated (Gregory 1982:117-140,166-209).

F. Political economy and the Dene

The Dene no longer have a solely traditional hunting and gathering economy. They participate in the industrial market economy through commodity production for sale, wage employment, and cash transfer payments and government services. The extent to which this market involvement has altered the social institutions of the Dene is the subject of a long-term debate between acculturation theorists (e.g., Steward (1979), Murphy and Steward (1968)) and other researchers (Asch (1982), Helm *et al* (1975), Savishinsky (1978), Rushforth (1977), and others). The results of the inquiries into the Dene economy undertaken in the 1970's have supported the contention that hunting activities are significant in an economic sense. Other social institutions related to economic activities are more subtle. In the words of Asch:

> "The other aspect of the question to be considered here concerns the institutional framework and value system within which Dene hunting-gathering production takes place. Specifically, the issue is whether, after two hundred years of contact, Dene institutions and values still remain vital." (Asch 1982:356)

Asch follows this with an analysis of historic events beginning with the fur-trade period to modern times, and how these affected the Mackenzie drainage Slavey. He cites two major changes: a reduction in the quantity of goods obtained through hunting/gathering activities, and a shift in the primary production-consumption unit from the local band to the household (*ibid.*,358).

> "However, in most other respects, the traditional institutional and value framework of Dene hunting-gathering remained little changed well into the 1970s. For example, within the primary unit of production and consumption, labour was still organized solely on the basis of age and sex. As well, hunting-gathering still relied on methods of game capture that are labour-intensive and required collective action. Further, reciprocity still obtained within the household and, indeed, where surpluses existed this practice was routinely extended to other households in the community which used to form a local band and, whenever possible, even to the community as a whole. Finally, traditional roles concerning the ownership of land as a means of production remained in place." (*ibid.*,359)

In Chapter Four, I gave a brief outline of bush production activities as they occurred in the summer of 1984. There would appear to be considerable correlation between many aspects of these activities with what was described for the 1970's. To a certain extent, the economic recession of the late 1970's and early 1980's has resulted in a more cautious attitude regarding the place of industrial development in the future of the north. Bush life was seen by many as an important tool for their children , in part due to its reliability, but also for the social values associated with it (e.g., see DeLancey 1985). Many elements of Dene institutions and values, to address Asch's question, remain viable in the mid 1980's as well.

Returning to issues of economic theory, the political economy approach, as outlined above, would be particularly appropriate for the present purposes of analysing the Dene economy and imputing value to subsistence production for two reasons.

1. The purpose of imputing value to Dene subsistence production is closely tied to the protection of these productive activities (compensation programs constitute one

method), not only for the goods produced, but also for the social organization of their production. This has long historic roots and is central to Dene culture. Therefore, it is important that the social relations of Dene subsistence production be included as a vital part of any description of the Dene economy. Valuing the products of subsistence activities only, equating them with commodities from market economic activities, is incorrect in theory and produces dubious results in practice. As well, it may be used to imply that the differences between Dene subsistence activities and their social and cultural context and those of any southern Canadian wage labourer are only a matter of where hours of labour are put in and the form of payment received. The important difference between control over the means (or much of them) of acquiring basic subsistence as a social group (and reproducing that social system) counterposed to being required to labour or otherwise enter into the wage economy, is masked when the focus is upon products. Both subsistence hunting activities and wage labour produce products in order to make a living, but one occupation has control over their production and its concomittant distribution and consumption, and the other does not.

2. The political economy approach emphasizes the social relations of production. This a particularly important element of analysis in the case of the present Dene economy where there is a substantial involvement in wage labour, but where crucial values, practices and identity are seated in subsistence production relationships. By examining these social relations, it is not assumed that market industrial organization is necessarily dominant wherever it occurs. Subsistence production activities, for the Dene, have proven to be reliable and consistent, as counterposed to the boom-bust cycles of industrial activities and erratic government interest in the north.

A detailed study of the Dene economy, in the broad sense, following a political economy approach could enable the aspects of the economy which are currently important issues to be examined. Conversely, any approach which does not take into account the social, historic, cultural and political relations of production, such as an analysis of the cash value of subsistence products, is likely to be counter-productive for the purpose at hand, that of supporting the continuation of the Dene bush way of life.

Political economy and compensation

Following from the definition of property as 'a system of rights...' versus an actual physical object, a political economy analysis of the operation of the Dene economy would be appropriate for the description and definition of Dene property, for the purpose of entrenching and protecting Dene systems of property rights. However, an analysis of this sort is not enough to achieve the protection of the ability of the Dene to pursue their way of life and reproduce their society. Protective measures, of which compensation is only one (and in some senses the least desireable), are required to establish control of the system of rights in the hands of the Dene themselves, as it is the ability to make decisions and guide activities that is basic to control of a way of life. The focus of a political economy analysis of social relations of production and the protection of Dene productive activities could be expected to highlight the dynamics of the Dene way of life and mode of production. It is within the province of legislation and judicial affairs to devise appropriate means of insuring their continuation.

VI. Conclusions

A. Summary

The purpose of the valuation of subsistence production has changed with changing circumstances in the north. Industry involvement has become a reality rather than proposed and isolated incursions. Valuation studies, as part of the response to the efflourescence of industry in the north, successfully drew attention to the subsistence sector of Native economies and demonstrated their significant input. However, subsistence activities have been increasingly threatened by conflicting industrial resource use. It has become necessary to examine the value of subsistence production activities once again, this time with an eye to their protection or compensation for their damage.

Previous studies of Native traditional subsistence hunting and fishing generally represented this production in some sort of quantitative manner deemed appropriate for the purpose of the particular study. This took the form of areal representation, as in the *Inuit Land Use and Occupancy Project* (Freeman 1976), products obtained per unit of work (Rogers 1973), or in the form of cash-equivalent value calculations (Rushforth 1977 and others, see Chapter Two). The latter studies, by their nature, stressed the value of the products of subsistence activities and were restricted in their ability to include aspects of these activities that were not quantifiable in their calculations. Shortcomings of this approach were cited repeatedly but were not considered to impair its usefulness for demonstrating the material significance of subsistence activities. However it is the precise area of weakness of these approaches — their inability to value the way of life basic to subsistence production — that is required for the present purposes of valuation.

In order to critique previous valuation efforts, it was necessary to utilize a theoretical framework which would clarify their inadequacies and suggest more appropriate means. Previous valuation was done using a commodity analogy, stemming from mainstream Economic theory based on the study of consumer behaviour in the marketplace, with *a priori* assumptions such as scarcity and maximization. Basic values of importance to the Dene are not explicable by this theory, and are in fact designated as intangibles. The alternative that was suggested was the political economy approach, which stemmed from the fields of classical economics and social and economic anthropology. Its strengths were in its ability to express subsistence production in the context of commodity production, the major purpose of valuation studies, in terms of the social organization and material relationships of each. It has the potential of constructing a description of the Dene economy which includes the values that Dene attach to subsistence production activities, discussing the organization of both commodity and subsistence production and their interrelationship, as well as affording the historical depth appropriate to understanding how this situation came about and how it might be dealt with in the future. Although the analysis of the Dene economy along the lines of the political economy approach is beyond the scope of the present study, it has received attention here because of its utility for critiquing previous valuation efforts and to suggest directions that further research might take in the valuation of subsistence production.

Some of the implications of the use of mainstream economic analysis for valuing subsistence production are highlighted when applied to compensation. In a practical sense, compensation for loss or diminution is limited by difficulties in valuing this production, and by a reluctance by government and industry to consider non-monetary forms of compensation . On a more theoretical plane, compensation, and welfare economics in general, has shortcomings in its selection of welfare objectives that are feasible, equitable, and efficient. The result is that compensation by industry has tended to consist of cash payments to individuals for specific capital losses. Government has at times sought to approach the issue of social costs resulting from development, but compensation has generally taken the form of cash for the purposes of setting up social programs under government direction. Thus compensation for other forms of rights to protect a way of life have been manifested in negotiations for property rights and political authority, in the form of land claims negotiations and political self-determination.

The economic activities and associated values which were described in Chapter Four emphasized subsistence production. However the Dene engage in numerous market/wage activities and the effect of traditional bush activities on many Dene individuals and Dene society in general is an issue of debate. Although this is a question that is not the primary concern of this thesis, it has been addressed by others (e.g., Asch 1980, 1982; Feit 1982; Hudson 1982; Leacock 1982). Referring to the Dene, Asch described their economy as consisting of two elements, or modes of production — the bush subsistence mode and capitalism — which interrelate to form a single system (Asch 1980). Though the two modes stress different political and social values and arrangements, their interrelationship means that values that are in operation in the subsistence mode are often important in many aspects of everyday life. The desire to preserve and strengthen these arrangements, as part of the subsistence-capitalism mix of the modern Dene economy, is an important consideration in studies of the value of subsistence production.

B. Imputing value

When the context of Dene subsistence production is expanded beyond the acquisition and processing of animal products to include the social reproduction of a group of people, the value of this production becomes complex and takes on qualitative elements. As outlined in Chapters Three and Four, the Dene identify numerous aspects of their bush production activities as being of value, and the types of value cited range from the quality and availability of bush food, to the independence and self-motivation of bush life, to the superior atmosphere of bush living for raising children. The totality of these valued elements cannot be quantified or represented by a cash figure.

The position that subsistence production, whether agricultural, hunting-gathering, or other non-market activities such as the recreational use of wildlife, cannot be quantitatively valued is a subject of debate in economic anthropology and economics. For example, Michael Chibnik (1978), in an article on the value of subsistence production in peasant agriculture, cited Chayanov (1966) and Sahlins (1971, 1972) as supporting the position that subsistence production cannot be valued quantitatively. Chayanov's argument was represented as being that the categories used in modern (c. A.D. 1900) capitalist economic analysis, i.e., price, capital, wages, interest, and rent, are functionally interrelated. Since household agricultural labour cannot be valued according to prevailing wage rates in a capitalistic farming venture, no monetary value can be imputed for crops grown for domestic consumption. Sahlins argued that peasants and hunter-gatherers produce for use rather than for exchange (he returns to the early classical concepts of use-value and exchange-value of Smith, Marx, etc., *op cit*), and that use value and exchange value, or livelihood and wealth, are incommensurable. Chibnik then responded to these positions:

> "The 'value' of peasant production, however, is more closely related to market price than either Sahlins or Chayanov admits. Peasants must allocate land and labor to staple and cash crops on the basis of perceived differences in the 'value' of the two kinds of crops. A farmer's judgment about the value of a cash crop is likely to be strongly influenced by its market price and farmers who plant staple rather than commercial crops demonstrate that their expected return from the subsistence crop is higher than the market price of the cash crop.
>
> In any case, the many agriculturalists in the world who devote increasing amounts of land, labor and capital to cash crops confound neat distinctions between non-capitalist and capitalist enterprises. At what point does a farmer cease to produce for use value? At what point does the price category become prominent? Presumably Sahlins would argue that these changes occur when agriculturalists seek to increase their standard of living rather than to maintain it. Yet if this is so, the views of Sahlins (and perhaps also Chayanov) on peasant economic behavior have only limited relevance to the decision making process of the millions of small farmers seeking to accumulate some wealth." (Chibnik 1978:566)

Chibnik's analysis is constrained by the premises of scarce resources and infinite wants, of economic theory. He therefore examines the aspects of peasant production to which these assumptions lead the analysis: allocative decisions by peasant producers. However, agriculturalists, both peasants and family farmers, have repeatedly demonstrated a reluctance to abandon their way of life and adopt a wage-labour lifestyle, in spite of the difficult work and often less profitable lifestyles that agriculture affords (Clement 1984:225-243). Although it is true that commodity production is informed by market prices, the objectives of producers do not automatically become those of the market place (this is difficult to appreciate in economics analysis, where maximization is another basic premise). Both peasant/family farmers and Native subsistence producers require cash inputs to support their non-cash productive activities, and the ways of life that they wish to support are intimately linked to values that have little relation to market prices: society, tradition, independence, industriousness, and self-determination (DeLancey 1985:6). The objectives of participation in capitalist production require closer examination before all small farmers and Native economies are categorized as merely "seeking to accumulate some wealth". For example, in an analysis of small peasant households in the Nile Delta of Northern Egypt in the late 1970s to early 1980s:

> "In spite of increased commoditization within agrarian Egypt, help and co-operation amongst small peasant households continues to take numerous forms, be it in terms of labour, tools, utensils, etc., which together make it possible for Egyptian peasants to continue to reproduce themselves as peasants and not as full-scale proletarians, wholly dependent on wage labour. Through these mechanisms small peasants can decrease their dependence upon market relations and hence contribute to the inablilty of capitalist relations of production to become predominant within agrarian Egypt." (Glavanis 1984:57)

Similarly, the Dene subsistence economy is dependent on cash inputs, but rather than facilitating a complete shift to wage labour, wages can finance subsistence activities.

> "No one in the North will deny that the subsistence economy is changing with the times. Hunters and trappers have to work for wages to equip themselves with needed technology — skidoos, rifles, gasoline and bullets, among other things. Most families choose to stay in town for at least part of the year to enable their children to attend school. Many young people are opting for training in a wide variety of trades and professions. Many families choose to live in town year-round rather than spend extended periods of time on the land.
>
> But none of this means that people have stopped harvesting or ceased to rely on resources from the land. Patterns of harvesting vary from community to community, from year to year, depending on availability of wage employment, fur prices and distribution of animal populations.
>
> Not too long ago, it was generally assumed that availability of wage employment tended to reduce the involvement in harvesting. But, at least in some areas, harvesting may actually increase with availability of wage labour, because working provides people with the capital to outfit themselves." (DeLancey 1985:7)

In a different sphere but using the same analytical tools, James Crutchfield (1962) addresses the valuation of fishery resources. He considers commercial fishing and sport fishing, and his analysis of sport fishing is interesting for its consistency with the approach generally taken in valuing wildlife resources used for recreation.

> "The idea that sport fishing (or, for that matter, outdoor recreation in general)

> should not be valued in money terms even in theory must be rejected. To argue that there are intangible values associated with fishing which cannot be registered by the pricing mechanism reveals a fundamental misunderstanding of the role of prices in a market economy as an aggregate measure of human choices. The common denominator is the satisfaction which consumers expect to derive from additional amounts of the various commodities and services available to them, and it is measured in a simple and direct way: willingness to pay at a price. To endow sport fishing or mountain climbing with some kind of 'extra' values, incapable of being measured in willingness to pay, is to deny the rationale of our entire economic organization." (Crutchfield 1962:149)

In a sense, Crutchfield has stated the kernel of the problem: questioning the rationale of our entire economic organization, or its applicability to diverse situations where *a priori* conditions of infinite wants and scarce resources act as prime motivators, is indeed the issue. Perhaps a more appropriate consideration is whether the resultant analysis is capable of adequately describing the situation being analysed, or whether a less quantified description of the workings of the societies or institutions at issue is superior.

Following the description of the activities, context, and values attached to Dene subsistence production given in Chapter Four, and the analysis of the uses to which imputing value to subsistence products may be put in Chapter Two, it is argued here that it is not possible to impute value for Dene subsistence activities. The reason for this is that present applications of this sort of analysis are directed toward the effects of capitalist industrial activities on Dene subsistence production and associated way of life, and that assigning a price to these activities is not only impossible, but inadviseable as well.

Imputing value is a tactic that was used successfully to demonstrate the existence of a viable subsistence economy for the Dene. This tactic could conceivably be used again, for other purposes. However, it should be kept in mind that the figures arrived at in no way actually describe the value of subsistence production activities to the Dene, and imputing value is not a substitute for detailed analysis of these activities (including their social facets). Any courses of action that must be undertaken concerning subsistence production activities require a careful look at the complex network of values involved. The ranking of these values and ultimately the plans for the future context of bush activities in the Dene economy can only be accomplished by the Dene themselves.

C. Protecting a way of life through compensation and mitigation

The issue of compensation for loss of a way of life admits a certain level of defeat at the outset. Compensation, in the broader context of compensation-mitigation, property rights, and political self-determination, is certainly not the best way to protect a way of life, although it may represent the 'ultimate insurance'. It can only be successful in this capacity if certain conditions are met, conditions which have unfortunately proven to be weaknesses of compensation measures in the past. These are such factors as the difficulty of dealing with intangible assets, the expensive, time consuming and inefficient nature of judicial and legislative institutions in determining and implementing compensation, the lack of success of compensative measures to actually redress the losses of the claimants, the piecemeal and individualistic nature of the settlements, the difficulty of dealing with compensation through government bureaucracies, the finite nature of most settlements (versus the long-term or open-ended conditions which they seek to redress), and the loss of control often accompanying compensative measures due to the establishment of government/bureaucratic regulatory bodies. Though all of these factors may not be felt in each instance, and additional factors may be important to particular cases, they create a situation where it is difficult to be optimistic for compensation measures to effectively protect a threatened way of life.

To protect a way of life, it must first be defined and described. In the discussion of valuing, it was observed that a way of life is not the same as a livelihood, and it is important to add here that a way of life involves the ability to change a livelihood entirely. Yet it is livelihood that is most often the subject of compensative measures, not the qualities of flexibility, control, and self-determination. It is necessary that the thrust of protective measures (compensation, mitigation, land rights settlements, comprehensive claims policies, political self-determination) be directed toward the self-controlled and dynamic nature of ways of life such as those of Native northerners, i.e., the replacement of an active fishery with a quantity of fish is not an appropriate measure. To this end, considerable input from the people involved is a necessity, and the measures taken must support and enhance their ability to guide their own activities, in accordance with their own values, and reproduce their societies. They must have the real power to adequately redress infringements on their way of life from outside interests (including government) in the case of compensative measures, and to plan for the protection of their continued ability to decide the future of their way of life, in the case of mitigative and other future planning measures. Restricting the ability of Native groups to make these sorts of decisions ultimately renders many of the measures failures. For example, regarding compensation monies:

> "The compensation monies have the potential to be the most powerful economic tool native communities will ever have in a modern wage economy. To call these monies 'compensation' suggests that they are payments to native signatories for the aboriginal rights they have given up or sold under the agreement. Unlike vendors in real estate transactions, however, the native benificiaries are not free to make use of the compensation monies as they wish. Through a combination of federal policy and self-imposed discipline, the native beneficiaries are expected to use these funds to accomplish certain objectives." (CARC 1985:5)

The devastating effects of replacing the local, indigenous control of economic activities with programs instituted and managed by outside interests — specifically government — was documented for the Fort Hope band of northwestern Ontario:

> "The authors ... found that government bureaucrats held virtually all control over the band yet were never accountable to it; that government agencies operated without clear or workable objectives and failed to monitor or assess projects once they were in place. They discovered at the same time that civil servants believed that band members were responsible for all business failure and all social breakdowns." (Driben and Trudeau 1983:i)

Achieving effective protection for a way of life in a one-time agreement or settlement is highly unlikely (or impossible). To be truly effective, compensative measures must continue until adverse conditions are rectified. Other protective measures (e.g., comprehensive claims settlements) need to be subject to alteration until their objectives are achieved and their implications realized. Given the fact of development in the north and commensurate and difficult to predict changes, the protection of ways of life is likely to require periodic assessment and redirection. One-time agreements fall into the category of redressing the loss of fixed, tangible assets (even though they may be as broad as livelihood or employment). They are thus inappropriate for protecting something as dynamic and flexible as a way of life.

> "CARC believes that finality is one of the main obstacles to the timely negotiation of just settlements with native people in the North. It forces the native claimants to be extremely cautious about the content of these agreements because they must anticipate how the many and complex terms might apply as the future brings demographic, social, economic, cultural, and political changes. This is an impossible task and it is made all the more burdensome by the knowledge of the disappointments and difficulties that followed the signing of treaties with Indians in southern Canada and the claims settlements in Alaska and Nouveau-Quebec. ...
>
> The policy of finality with respect to compensation monies is unjust and may prove to be unworkable because it demands that native beneficiaries pursue public, collective economic and non-economic objectives using a resource (a fixed amount of capital) that would normally maintain its real value if directed efficiently and single-mindedly to maximize profit. ... Other institutions in Canadian society that fulfill public policy objectives — governments, private charities, co-operatives, and the like — usually are not expected to function with a capital sum that is fixed once and forever." (CARC 1985:3-4,6)

What is required, then, is a perspective on compensative and other protective measures, as applied to the situation of the Dene and other Native northerners, which is directed toward the protection of their way of life, consisting of a variety of productive activities (both subsistence and market-directed), social values, and the ability to alter and direct these activities to determine their future in the modern world. This will involve a radical departure from most previous compensation policies, which may prove to have unforeseen advantages, given the problems with current compensative measures even in the context for which they were developed. As well, it is only through the adoption of protective measures which directly address the ability of Native northerners to reproduce their society and way of life that a reasonable chance of success exists, and that could be considered to be negotiated in good faith. For this goal to be attained, Native northerners must have political control over their lands and the activities which impinge on their ability to conduct their way of life.

Bibliography

Anger, H.D. and J.D. Honsberger
1959 *Canadian law of real property*. Canadian Law Book Company, Ltd., Toronto.

Asch, Michael
1979 The ecological-evolutionary model and the concept of mode of production. In D. Turner and G. Smith (eds.), *Challenging Anthropology*, McGraw-Hill Ryerson, Toronto.

Asch, Michael
1980 On the integration of hunting into a modern economy: a critique and evaluation of the findings of the Mackenzie Valley Pipeline Commission. Paper presented to the Second International Conference on Hunting and Gathering Societies, Quebec City, September 1980.

Asch, Michael
1982 Dene self-determination and the study of hunter-gatherers in the modern world. In Eleanor Leacock and Richard Lee (eds.), *Politics and history in band societies*. Cambridge University Press, Cambridge.

Berger, Thomas
1977a *Northern frontier, northern homeland: the report of the Mackenzie Valley Pipeline Inquiry*. 2 Volumes. Queens Printer, Ottawa.

Berger, Thomas
1977b *Mackenzie Valley Pipeline Inquiry: synopsis of Volume Two*.Department of Indian Affairs and Northern Development. Ottawa.

Berger, Thomas
1985 *Village Journey. The report of the Alaska Native Review Commission*. Hill and Wang, New York.

Berkes, Fikret and Carol S. Farkas
1978 Eastern James Bay Cree Indians: Changing patterns of wild food use and nutrition. *Ecology of Food and Nutrition*, 7, pp. 155-172.

Bisset, Don
1974 *Resource harvests — Hunter-trappers in the Mackenzie Valley*. Environmental-Social Program, Northern Pipelines, Department of Indian Affairs and Northern Development, Ottawa.

Bodden, Kenneth
1981 *The economic use by Native peoples of the resources of the Slave River delta*. M.A. Thesis, Department of Geography, University of Alberta.

Bourassa, Robert
1973 *James Bay*. Harvest House, Montreal.

Brackel, W.D.
1977 Socio-economic importance of marine wildlife utilization. *Beaufort Sea Technical Report*, No. 32.

Brody, Hugh
1981 *Maps and dreams*. Penguin Books, New York.

Calef, George
1981 *Caribou and the barren-lands*. Canadian Arctic Resources Committee, Ottawa.

Canada
1981 *In all fairness. A Native claims policy*. Department of Indian Affairs and Northern Development, Ottawa.

Canada
1984 *The Western Arctic Claim. A guide to the Inuvialuit final agreement*. Department of Indian Affairs and Northern Development, Ottawa.

Canadian Arctic Resources Committee
1985 CARC's brief to the Task Force on Native Claims Policy. *Northern Perspectives*, 13:5. Canadian Arctic Resources Committee, Ottawa.

Chayanov, A.V.
1966 *The theory of peasant economy*. R. Irwin, Illinois (1920).

Chibnik, Michael
1978 The value of subsistence production. *Journal of Anthropological Research*, 34, pp. 561-576.

Clark, J.B.
1886 *The philosophy of wealth*. Ginn, Boston.

Clement, Wallace
1983 *Class, power and property: Essays on Canadian society*. Methuen, Toronto.

Cook, Scott
1968 The obsolete "anti-market" mentality: a critique of the substantive approach to economic anthropology. In E. LeClair Jr. and H. Schneider (eds.), *Economic Anthropology*. Holt, Reinhart and Winston, Inc., New York, pp. 208-227.

Crutchfield, J.A.
1962 Valuation of fishery resources. *Land Economics*, 38:5, pp. 145-154.

Cunningham, Frank
1978 *Understanding Marxism: A Canadian introduction*. Progress, Toronto.

Dalton, George
1968 Economic theory and primitive society. In E. LeClair Jr. and H. Schneider (eds), *Economic Anthropology*. Holt, Reinhart and Winston, Inc., New York, pp. 143-167.

Davis, William
1973 *Social relations in a Phillipine market: Self-interest and subjectivity*. University of California Press, Berkely.

DeLancey, Debbie (Fee Yee Consulting Ltd.)
1984 Recommendations on a compensation policy for renewable resource harvesters. Report prepared for the Dene/Metis Negotiations Secretariat, Yellowknife.

DeLancey, Debbie
1985 Trapping and the aboriginal economy. *Information North*. Arctic Institute of North America, pp 5-12.

Driben, Paul and Robert S. Trudeau
1983 *When freedom is lost. The dark side of the relationship between Government and the Fort Hope Band*. University of Toronto Press, Toronto.

Edmonton Journal
1985 Ontario Indians accept $16.5 M compensation. November 26, 1985.

Ekelund, Robert B. Jr. and Robert F. Hébert
1983 *A history of economic theory and method*. McGraw Hill, New York.

Engels, Frederick
1972 *The origin of the family, private property, and the state — in the light of the researches of Lewis H. Morgan*. International Publishers, New York.

Feit, H.A.
1973 The ethno-ecology of the Waswanipi Cree: or how hunters can manage their resources. In B. Cox (ed.), *Cultural ecology*. McClelland and Stewart, Toronto, pp. 115-125.

Feit, H.A.
1982 The future of hunters within nation-states: Anthropology and the James Bay Cree. In Eleanor Leacock and Richard Lee (eds.), *Politics and History in Band Societies*. Cambridge University Press, Cambridge.

Fisher, Michael
1981 *An assessment of methods of collecting and valuing Native subsistence fish and marine mammal harvest data in the NWT*. Thesis, Natural Resource Institute, University of Manitoba.

Freeman, Milton M.R., ed.
1976 *Inuit land use and occupancy project*. 3 Volumes. Department of Indian Affairs and Northern Development, Ottawa.

Freeman, Milton M.R., ed.
1981 *Proceedings: First International Symposium on Renewable Resources and the Economy of the North*. Association of Canadian Universities for Northern Studies, Ottawa.

Fuller, W.A.
1981 Fish, fur and game in the Northwest Territories: some problems of, and prospects for, increased harvest. In Milton Freeman (ed.) *Proceedings: First International Symposium on Renewable Resources and the Economy of the North*. Association for Canadian Universities for Northern Studies, Ottawa.

Gemini North Ltd.
1974 *Social and Economic Impact of Proposed Arctic Gas Pipeline in Northern Canada*. 7 Volumes. Canadian Arctic Gas Pipeline Ltd..

Glavanis, Kathy R.G.
1984 Aspects of non-capitalist social relations in rural Egypt: the small peasant households in an Egyptian delta village. In Norman Long (ed.), *Family and Work in Rural Societies — Perspectives on non-wage labour*. Tavistock Publications, London.

Godelier, M.
1973 *Perspectives in Marxist Anthropology*. Cambridge University Press, Cambridge.

Gregory, C.A.
1982 *Gifts and Commodities*. Academic Press, London.

Hébert, R.F. and R.B. Ekelund
1984 Welfare economics. In J. Creedy and D.P. O'Brien, *Economic analysis in historical perspective*. Butterworths, London.

Hedley, Max
1979 Domestic commodity production: small farmers in Alberta. In D. Turner and G. Smith (eds.), *Challenging Anthropology*. McGraw-Hill Ryerson, Toronto.

Helm, June, Terry Alliband, Terry Birk, Virginia Lawson, Suzanne Reisner, Craig Sturtevant, and Stanley Witkowski
1975 The contact history of the subarctic Athapaskans: an overview. In A. McFadyen Clark (ed.), *Proceedings: Northern Athapaskan Conference*. 2 Volumes. National Museum of Man, Mercury Series, Canadian Ethnology Service Paper 27, Ottawa.

Herskovits, M.J.
1952 *Economic anthropology: a study in comparative economics*. Alfred A. Knopf, New York.

Hindess, Barry and Paul Q. Hirst
1975 *Pre-capitalist modes of production*. Routledge and Kegan Paul, London.

Hudson, Douglas R.
1982 *Traplines and timber: social and economic change among the Carrier Indians of northern British Columbia*. PhD dissertation, Department of Anthropology, University of Alberta.

James Bay and Northern Quebec Native Harvesting Research Committee
1982 *The wealth of the land. Wildlife harvests by the James Bay Cree, 1972-73 to 1978-79*. James Bay and Northern Quebec Harvesting Research Committee, Quebec City.

Knetsch, Jack L.
1983 *Property rights and compensation: compulsory acquisition and other losses*. Butterworths, Canada.

Langford, W.A. and D.J. Cocheba
1978 *The wildlife valuation proplem: a critical review of economic approaches.* Occasional paper no. 37, Canadian Wildlife Service, Ottawa.

Leacock, Eleanor
1982 Relations of production in band society. In Eleanor Leacock and Richard Lee (eds.), *Politics and history in band societies*. Cambridge University Press, Cambridge.

Levi-Strauss, C.
1949 *The elementary structures of kinship*. Eyre and Spottiswoode, London.

Lipsey, Richard, Gordon Sparks and Peter Steiner
1973 *Economics*. Harper and Row, New York.

Lu, Chang-Mei
1972 Estimation of net imputed value of edible subsistence production in the Northwest Territories. Department of Indian Affairs and Northern Development, Ottawa.

Macpherson, C.B.
1973 *Democratic theory: essays in retrieval*. Clarendon Press, London.

Macpherson, C.B.
1978 *Property: mainstream and critical positions*. University of Toronto Press, Toronto.

Malinowski, Bronislaw
1961 *Argonauts of the Western Pacific*. E.P. Dutton and Co., New York.

Mandel, Ernest
1971 *Marxist economic theory*. Merlin Press, London.

Mauss, Marcel
1967 *The gift — forms and functions of exchange in Archaic societies*. W.W. Norton and Company, New York.

Marx, Karl
1957 *Capital — a critical analysis of capitalist production*. 3 Volumes. George Allen and Unwin, Ltd., Woking.

Marx, Karl
1980 *Precapitalist economic formations*. International Publishers, New York.

Meehan, Eugene J.
1968 *Explanation in social science — a system paradigm*. The Dorsey Press, Illinois.

Morgan, L.H.
1877 *Ancient Society*. Macmillan, London.

Murphy, Robert F. and Julian H. Steward
1968 Tappers and trappers: parallel process in acculturation. In Robert A. Manners and David Kaplan (eds.), *Theory in Anthropology*. Aldine, Chicago.

Northern Flood Agreement
1977 *Northern Flood Agreement*. Between the Province of Manitoba, Manitoba Hydro-Electric Board, Northern Flood Committee Inc., and the Federal Minister of Indian Affairs and Northern Development.

Northwest Territories
1984 *Renewable Resource Compensation Policy and Directive*. Government of the Northwest Territories, Yellowknife.

Norwegian, Herb
1985 Statement to Canadian Arctic Resources Committee's Third National Workshop, Yellowknife, 1983. *Northern Perspectives* 13:5. Canadian Arctic Resources Committee.

Nowak, Michael
1977 The economics of native subsistence activities in a village of southwestern Alaska. *Arctic* 30:4 pp.225-233.

O'Laughlin, B.
1975 Marxist approaches in Anthropology. *Annual Review of Anthropology* 341-370.

Oswalt, Wendell H.
1966 *This land was theirs: a study of the North American Indian*. John Wiley and Sons, New York.

Palmer, J.
1974 Measurement of the value of economic activity in the north. Department of Indian Affairs and Northern Development, Ottawa.

Pavich, Mary
1984 The estimation of the imputed value of traditional activities, Northwest Territories, Yukon 1967-1974. Department of Indian Affairs and Northern Development, Ottawa.

Philbrick, Francis S.
1939 *Property*. P.F. Collier and Sons, New York.

Polanyi, Karl
1968 The economy as instituted process. In E. LeClair Jr. and H. Schneider (eds.), *Economic Anthropology*. Holt, Reinhart, and Winston, New York, pp. 122-143.

Reid, Dennis Stafford
1980 *Mitigation and compensation for fish and wildlife losses during resource developments in British Columbia and Alberta*. MSc thesis, Committee of Resources and the Environment, University of Calgary.

Rodahl, K.
1952 *Vitamin content of arctic plants and their significance in human nutrition*. Arctic Hero Medical Laboratory, Ladd Air Force Base, Alaska.

Rogers, Edward S.
1973 *The quest for food and furs. The Mistassini Cree, 1953-1954*. National Museums of Canada, Publications in Ethnography No. 5, Ottawa.

Rushforth, Scott
1977 Country food. In Mel Watkins (ed.), *Dene Nation — the colony within*. University of Toronto Press, Toronto.

Sahlins, Marshall
1971 The intensity of domestic production in primitive societies: social inflections of the Chayanov slope. In G. Dalton (ed.), *Studies in Economic Anthropology*. American Anthropological Association, Washington D.C..

Sahlins, Marshall
1972 *Stone age economics*. Aldine, Chicago.

Salisbury, Richard F., Fernand Filion, Farida Rawji and Donald A. Stewart
1972 *Development and James Bay. Social Implications of the Proposals for the Hydroelectric Schemes*. Department of Sociology and Anthropology, McGill University, Montreal.

Savishinsky, Joel S.
1978 Trapping, survival strategies, and environmental involvement: a case study from the Canadian sub-arctic. *Human Ecology* 6:1.

Schaefer, Otto
1969 Education of northern population groups in regard to value of Native food resources. Unpublished manuscript. National Health and Welfare, Edmonton.

Schaefer, Otto
1977 Changing dietary patterns in the Canadian north: health, social and economic consequences. *Journal of the Canadian Dietetic Association* 38:1.

Slattery, Brian
1984 The hidden constitution: aboriginal rights in Canada. *American Journal of Comparative Law* 361-391.

Smith, Adam
1908 *An inquiry into the nature and causes of the wealth of nations*. 2 Volumes. Oxford University Press, London (1776).

Smith, Derek G.
1975 *Natives and outsiders: pluralism in the Mackenzie delta*. Mackenzie Delta Research Project 12. Department of Indian Affairs and Northern Development, Ottawa.

Steward, Julian H.
1979 *Theory of culture change: the methodology of multilinear evolution*. University of Illinois Press, Urbana.

Taylor, Philip A.S.
1980 *A new dictionary of economics*. Routledge and Kegan Paul, London.

Usher, Peter J.
1970 *The Bankslanders: economy and ecology of a frontier trapping community*. 3 Volumes. Department of Indian Affairs and Northern Development, Ottawa.

Usher, Peter J.
1972 The use of snowmobiles for trapping on Banks Island. *Arctic* 171-181.

Usher, Peter J.
1976a Evaluating country food in the northern Native economy. *Arctic* 29:105-120.

Usher, Peter J.
1976b The Inuk as trapper: a case study. In Milton Freeman (ed.), *Inuit Land Use and Occupancy Project*. Volume 2. Department of Indian Affairs and Northern Development, Ottawa, pp.207-216.

Usher, Peter J.
1977 *Historical statistics approximating fish, fur and game harvests in the Mackenzie Valley, NWT, 1915-1976*. Report for the Department of Education, Government of the Northwest Territories.

Usher, Peter J.
1981 Sustenance or recreation? The future of native wildlife harvesting in northern Canada. In Milton Freeman (ed.), *Proceedings of the First International Symposium on Renewable Resources and the Economy of the North*. Association of Canadian Universities for Northern Studies, Ottawa.

Usher, Peter J.
1983 *The value of wildlife in northern Canada*. Report for NWT Wildlife Service.

Usher, Peter J.
1984 Property rights: the basis of wildlife management. In Canadian Arctic Resources Committee, *National and regional interests in the north: Third National Workshop on People, Resources, and the Environment North of 60*. Canadian Arctic Resources Committee, pp. 389-415.

VanStone, J.W.
1963 Changing patterns of Indian trapping in the Canadian subarctic. *Arctic* 159-174.

Weinstein, Martin S.
1976 *What the land provides. An examination of the Fort George subsistence economy and the possible consequences of the James Bay Hydroelectric Project*. Report of the Fort George Resource Use and Subsistence Economy Study. Grand Council of the Crees (of Quebec), Montreal.

Wolf, Eric R.
1982 *Europe and the people without history*. University of California Press, Berkely.